HELMINTHOLOGICAL ABSTRACTS

Vol. III, No. 5.

278—Acta Leidensia Scholae Medicinae Tropicae.

a. ESSED, W. F. R. & VAN THIEL, P. H.—"Eine merkwürdige Form von Ascariseiern." IX, 159-161. [1934.]

(a) Essed and van Thiel stress the importance of being acquainted with the infertile egg of Ascaris. They point out that it usually has a thinner shell, may lack the albuminous coat, may be asymmetrical, and is usually much longer than the fertile egg. They describe and illustrate some of these eggs which also gave the appearance of having an operculum. B.G.P.

279—Agricultural Gazette of New South Wales.

a. BELSCHNER, H. G.—"Present day knowledge of worms in sheep." XLV (7), 403-406. [1934.]

(a) Belschner in this concluding part [see Helm. Abs., Vol. III, No. 112a] deals with the dangers of overstocking and the importance of good management of pastures. He is of opinion that tetrachlorethylene is not superior to $CuSO_4$ or CCl_4 in its action on the larger stomach worms. The administration of anthelmintics in drinking water or in licks is not effective. Although anthelmintic treatment against the small trichostrongyles is ineffective, adequate feed keeps down these infestations. R.T.L.

280—Állatorvosi Lapok.

a. VAJDA, T. & ABONYI, L.—"A kutyák galandférgességéről és annak gyógyításáról 100 eset kapcsán." LVII (21), 299-304. [1934.]

(a) Vajda and Abonyi recommend the drug Taekil against cestodes in dogs, on the basis of experience with 100 cases. The drug, an arecolin preparation, is given *per os* in a dose of 0·1 c.cm. per Kg. body weight after 12 to 16 hours' starvation. They secured over 3,000 tapeworms, with scolices, from their 100 dogs—mainly *Dipylidium* sp. B.G.P.

281—American Journal of Cancer.

a. CURTIS, M. R., DUNNING, W. F. & BULLOCK, F. D.—"Further evidence in support of the somatic mutation hypothesis of the origin of malignancy." XXI (1), 86-98. [1934.]
b. CURTIS, M. R., DUNNING, W. F. & BULLOCK, F. D.—"Duration and extent of irritation versus genetic constitution in etiology of malignant tumors." XXI (3), 554-570. [1934.]
c. MENDELSOHN, W.—"The malignant cells of two crocker cysticercus sarcomata." XXI (3), 571-580. [1934.]

(a) Curtis *et al.* have made a statistical analysis of data collected over a 12-year period from a large colony of pedigreed rats experimentally infested with *Cysticercus fasciolaris* [see Helm. Abs., Vol. II, Nos. 195a, 216a] and deal here with the relation of the tumour to the host and to the parasite. They found an increase in the number of cysts per host was accompanied by an increase in the number of multiple primary *Cysticercus* tumours and that both cysts and tumours were distributed to the several lobes of the liver in a proportion approximately equal to the relative weight of the lobes, thus indicating a chance distribution of both cysts and tumours. Rats infested with Taenia larvae and also inoculated subcutaneously with *Cysticercus* sarcoma from another host sometimes developed both a transplanted and a primary tumour, sometimes neither, and sometimes one without the other. An average of 24 days elapsed from the time the tumour could be recognized until it proved fatal to the host. The size of an enclosed larva was not a factor in determining which cysts became malignant. The types of *Cysticercus* tumours observed represent the types of cells found in the cyst wall and each is represented by a number consistent with the expectation that the change of a normal to a tumour cell results from the chance action of an irritant. J.N.O.

(b) In rats experimentally infected with the cysticercus of *Taenia crassicollis* the percentage of cysts which became malignant increased with the age of the parasites. There was an inverse relation between the number of cysts per host and the proportion of cysts which became malignant. Cysts from hosts with a single cyst showed a significantly higher percentage of changes than those of the same age from the general rat population or from hosts with five cysts or of which both parents had had cysticercus sarcomata. R.T.L.

(c) By tissue culture technique the malignant cells of two spindle celled sarcomata from rat livers have been identified. The tumour cells which differ morphologically from the normal fibroblast originated from modified normal cells residing in the liver cyst wall. Mendelsohn is unable at present to identify the normal cell types or explain the mechanism of their malignant transformation. R.T.L.

282—Anales del Instituto de Biología.

a. CABALLERO, E. & SOKOLOFF, D.—" Tercera contribución al conocimiento de la parasitología de *Rana montezumae*. Trematoda. *Glypthelmins californiensis* Cort, 1919." V (4), 337-340. [1934.]

(a) Caballero and Sokoloff give a detailed anatomical description of *Glypthelmins californiensis* from *Rana montezumae*. Other hosts mentioned are *Rana pipiens* and *Rana aurora*, the latter in California. The whole morphology is figured and a good illustration of the excretory system, showing 18 pairs of flame cells, is given. S.G.S.

283—Anatomical Record.

a. AMERICAN SOCIETY OF ZOOLOGISTS.—" Program for the thirty-second annual meeting." XL, Supplement, 106 pp. [1934.]

(a) The programme contains a list of numbered titles and abstracts of which the following are of helminthic interest: (i) O. R. McCoy " The

development of adult trichinae in chick and rat embryos " (Paper No. 107); (ii) E. C. Faust " The interrelations of parasite and host tissue in experimental strongyloides infection " (No. 108); (iii) A. C. Chandler " Experiments on the passive transfer of immunity to an intestinal nematode infection, and its bearing on local immunity " (No. 109); (iv) G. W. Hunter III & W. S. Hunter " The life history of the black grub of bass, *Crassiphiala ambloplitis* (Hughes) " (No. 111); (v) W. W. Wantland " Effect of irradiated ergosterol and calcium lactate on calcification of trichina cysts " (No. 112); (vi) C. L. Graham " Lung infectibility of laboratory animals with pig and cat ascaris " (No. 113); (vii) T. Vergeer " The plerocercoids of *Diphyllobothrium latum* " (No. 114); (viii) T. Vergeer " *Diphyllobothrium laruei* sp. nov. and *Sparganum pseudosegmentatum* sp. nov., two cestodes from the Great Lakes region " (No. 115); (ix) T. Vergeer " The plerocercoids of *Diphyllobothrium latum* " (No. 116); (x) R. D. Manwell " Blood parasites of birds of the Syracuse (N.Y.) region " (No. 117); (xi) L. J. Thomas " Notes on the life cycle of *Ophiotaenia perspicua*, a cestode of snakes " (No. 119); (xii) C. T. Hurst " Body weight of snails in health and parasitism " (No. 120); (xiii) C. H. Willey " Cytological studies on flame cells in trematodes " (No. 131); (xiv) J. E. Ackert, L. L. Eisenbrandt, J. H. Wilmoth, B. Glading & I. Pratt " Comparative resistance of five breeds of chickens to the nematode *Ascaridia lineata* (Schneider) " (No. 168). B.G.P.

284—Annaes Paulista de Medçcina e Cirurgia.

a. PESSÔA, S. B.—" Nota sobre o choque anaphylactico com liquido hydatico." XXVII (2), 193-194. [1934.]

(a) Pessôa finds that following intraperitoneal infections of hydatid antigen, the uteri of virgin guinea pigs prepared by Dale's technique, react positively to hydatid fluid, but remain inactivated by white of egg, or fluid from *C. tenuicollis*.
Owing to superficial similarity between hydatid and *C. tenuicollis*, careful diagnosis is necessary before the antigen is prepared, in order to obtain certain results. P.A.C.

285—Annales d'Hygiène Publique, Industrielle et Sociale.

a. MIHAÉLOFF, S.—" Rôle des verdures dans la dissémination des germes pathogènes végétaux et animaux." 1934, No. 4, pp. 224-255. [1934.]

(a) Mihaéloff has examined vegetables, offered for sale in Cairo, for contaminations with bacteria, protozoa and helminths pathogenic to man. In 200 vegetables the helminthic contaminations were: hookworm 36 per cent., ascaris 31 per cent., oxyuris 4 per cent., trichuris 3 per cent. He makes suggestions for the prevention and control of such contaminations. B.G.P.

286—Annales du Musée d'Histoire Naturelle de Marseille.

a. JOYEUX, C. & TIMON-DAVID, J.—" Note sur des cestodes d'oiseaux récoltés dans la région de Marseille." XXVI, Mémoire 6, [Reprint 4 pp.] [1934].

(a) Joyeux and Timon-David describe 8 species comprising 6 genera of Dilepididae and 3 species of Hymenolepididae from birds in the environs of

Marseilles. One new species is recorded and figured, viz., *Choanotaenia strigium* n. sp. from *Otus scops* (L) the scops owl. *Biuterina triangula* is recorded for the first time in France from the redstart *Phoenicurus phoenicurus*. *Hymenolepis bilharzi* is said to be the first cestode recorded from the nightingale (*Luscinia megarhyncha*). *H. fringillarum* is recorded from *Sylvia simplex*, the garden warbler, for the first time. S.G.S.

287—Annales d'Oculistique.

a. HOUDEMER, DODERO & CORNET.—" Les sparganoses animales oculaires en Indo-Chine et la sparganose." CLXXI (4), 311-338. [1934.]

(a) Houdemer lists the 39 vertebrates in the neighbourhood of Tonkin known to harbour the sparganum of *Diphylolbothrium mansoni*. Dodero and Cornet deal with the pathology and clinical types in man. R.T.L.

288—Annales des Sciences Naturelles. Zoologie.

a. VANDEL, A.—" Le cycle évolutif d'*Hexamermis* sp., parasite de la fourmi (*Pheidole pallidula*)." Ser. 10, XVII, 47-58. [1934.]

(a) Vandel has investigated the life-cycle of an undetermined species of *Hexamermis* parasitic in the ant, *Pheidole pallidula*. During the years 1930-1933, 98 larval and adult worms were studied from 38 nests. Each infested ant contained only 1 larva which escaped from the anus and underwent, about a month afterwards, a moult to produce an adult in which the sex was recognizable. During summer and autumn from 1 to 8 adults were found, 10-25 cm. deep, in the soil surrounding the galleries of the nest; worms never occurred within the chambers or galleries. Parasitized ants usually died during the winter and only a few half-dead individuals existed till April. The worms paired during October to January and oviposition occurred during November to March; parthenogenesis does not exist. One out of several experimental infestations was successful and from it the author thinks that infestation occurs in the late larval or young pupal stages. He concludes from his investigations that the life-cycle is annual. J.N.O.

289—Annales Scientifiques de l'Université de Jassy.

a. LEON-BORCEA, L.—" Note préliminaire sur les cestodes des Elasmobranches ou Sélaciens de la Mer Noire." XIX, 345-369. [1934.]

(a) Leon-Borcea gives quite lengthy descriptions of cestodes from the spiral valve of *Trygon pastinaca* and of *Raja clavata* of the Black Sea. The material includes *Acanthobothrium coronatum* Rud., *A. dujardinii* v. Ben., *Phyllobothrium gracile* Wedl, *P. lactuca* v. Ben., *Anthobothrium cornucopia* v. Ben., *Echeneibothrium variabile* v. Ben., *E. minimum* v. Ben., *Echinobothrium typus* v. Ben., *Rhynchobothrius* (*Tetrarhyncobothrium*) *tenuicolle* Dies., *R. minutus* v. Ben., *R. erinaceus* v. Ben., *R. tetrabothrius* v. Ben., *Dibothrium* sp. One new form is described, *Acanthobothrium ponticum* n. sp. from *Raja clavata*. E.M.S.

290—Annali d'Igiene.

a. TIMPANO, P.—" La velocità di sedimentazione dei globuli rossi, la resistenza globulare e il tempo di coagulazione del sangue degli anchilostomiasici." XLIV (9), 806-812. [1934.]

(a) In comparing 30 cases of hookworm anaemia with 5 controls having anaemia due to other causes, Timpano has found that in the former the rate of sedimentation of red blood cells is accelerated, while the resistance to haemolysis and the time of coagulation are both reduced. B.G.P.

291—Annals of Surgery.

a. HOMANS, J., DRINKER, C. K. & FIELD, M.—" Elephantiasis and the clinical implications of its experimental reproduction in animals." C (4), 812-832. [1934.]

(a) By injecting into lymphatics a 2·5 per cent. solution of quinine hydrochloride combined with a suspension of crystalline silica-dust the authors have been able to produce elephantiasis in male dogs of the German sheep type. As the paper has obvious bearing on the explanation of " filarial " elephantiasis in man it is cited here although it deals with the helminthological aspects of the problem only indirectly. R.T.L.

292—Annals of Tropical Medicine and Parasitology.

a. GORDON, R. M., DAVEY, T. H. & PEASTON, H.—" The transmission of human bilharziasis in Sierra Leone, with an account of the life-cycle of the schistosomes concerned, *S. mansoni* and *S. haematobium*." XXVIII (3), 323-418. [1934.]

b. CONNOLLY, M.—" On the planorbid hosts of bilharziasis in South and West Africa." XXVIII (3), 439-443. [1934.]

(a) *Schistosoma mansoni* occurs in 29·5 per cent. of the adult women, 11·9 per cent. of the adult males and 21·1 per cent. of the children examined in Sierra Leone. In *Planorbis pfeifferi* and *Physopsis globosa* only were Schistosoma cercariae of human type found. *P. pfeifferi* proved to be susceptible to *S. mansoni* but not to *S. haematobium* infection. *P. globosa* proved susceptible to *S. haematobium* but not to *S. mansoni*. A detailed description is given of the development of the two species of Bilharzia in their respective hosts. No points of difference were detected in the morphology of the cercariae of *S. mansoni* and *S. haematobium*. Both possess 4 anterior and 6 posterior cephalic glands. The optimum aquarium temperature for rapidity of development of both species is 32°C. to 33°C. Measures known to be successful in eliminating *Physopsis globosa* from streams proved useless against *Planorbis pfeifferi*. R.T.L.

(b) A useful account is given by Connolly on the broad family affinities and chief external features of the south and central African shells which are the principal vectors of bilharziasis. The family Planorbidae comprises the subfamilies Planorbinae and Bulininae. In the genus *Planorbis* Müller, sensu lato are (i) *P. pfeifferi* Kraus which takes the place of *P. alexandrinus* (?=*P. boissyi*) of Egypt and (ii) *P. stanleyi* Smith. Physopsis contains the important species *P. africana* and *P. globosa*. The latter differs from the former principally in its slight rimation. The four species are well illustrated. R.T.L.

293—Annuario del Museo Zoologico della R. Università di Napoli.

a. DUBOIS, G.—" Étude de deux Strigeidae de la Collection de l'Institut Zoologique de Naples." VI (10), 12 pp. [1934.]

(a) Dubois describes (i) *Bolbocephalus intestiniforax* n. g., n. sp. from *Botaurus stellarus* and places it in a new family *Bolbocephalidae* in *Strigeoidea* and (ii) *Apatemon elassocotylus* n. sp. from *Limosa melanura* which differs particularly from other species of the genus in possessing an ejaculatory pouch. R.T.L.

294—Anzeiger der Akademie der Wissenschaften in Wien.

a. PINTNER, T.—" Über Entwicklungsvorgänge in der Cestodenkette." LXXI (19), 256-258. [1934.]

(a) Pintner describes the development of the gonads and their ducts and the structure of the subcuticular layer in segments of the tapeworms *Eutetrarhynchus*, *Lacistorhynchus* and *Acanthobothrium*. The cilia lining the vagina and uterus are non-motile, but form a non-return valve mechanism. The cuticle represents a transformation of the plasma at the free ends of the " subcuticular " cells, and is thus not a secreted layer. B.G.P.

295—Archiv für Dermatologie und Syphilis.

a. TEZNER, O.—" Versuche über Sensibilisierung der Haut mit Ascaridenantigen, sowie über das Verhalten der vasculären Überempfindlichkeit bei epithelialer Sensibilisierung." CLXX (3), 293-302. [1934.]

(a) Tezner refers to Fülleborn's experiments with ascaris antigen, by means of which he succeeded in producing experimentally an immediate cutaneous reaction—the only case recorded in the literature. The antigen was highly toxic and it is suggested here that it is composed of 2 distinct elements, one of which is primarily toxic and the other allergic.

Following daily injections of ascaris antigen, Tezner produced results exactly the same as those following serum sensitization. Application of arnica gave rise to an epithelial sensitization of the whole skin (eczema reaction) but the immediate and delayed reactions were negative. With ground mustard there was, however, a moderate epithelial sensitization and also positive immediate cutaneous and vascular reactions.

He infers therefore that with substances that are primarily toxic and which also produce an epithelial hypersensitivity, one can set up an immediate cutaneous reaction. This is not possible with substances that are not primarily toxic unless the patient exhibits an individual idiosyncrasy. P.A.C.

296—Archiv für Hydrobiologie und Planktonkunde.

a. DOGIEL, V. & PETRUSCHEWSKY, G.—" Die Wirkung des Aufenthaltsorts auf die Parasitenfauna des Lachses während seiner verschiedenen Lebensperioden." XXVI (4), 659-673. [1934.]

(a) In young salmon 11 species of helminths occur although in individual fishes more than 3 or 4 species were seldom seen. The increase in the degree of parasitism in fishes of different age varies in different helminth species. In the adult fish 14 species were recognized. The parasites of marine origin perish during the fish's stay in fresh-water. Every migration is accompanied by the death of the parasites acquired previous to migration. R.T.L.

297—Archiv für Wissenschaftliche und Praktische Tierheilkunde.

a. WETZEL, R.—" Untersuchungen über den Entwicklungskreis des Hühnerbandwurmes *Raillietina cesticillus* (Molin, 1858)." LXVIII (4), 221-232. [1934.]

(a) Wetzel finds that *Raillietina cesticillus* has certain beetles of the family Carabidae as intermediate host. The genera concerned are *Calathus*, *Poecilus*, *Pterostichus*, *Amara*, *Zabrus*, *Harpalus* and *Bradycellus*. Under the most favourable temperature conditions development to the infective stage takes place in 26 to 31 days. In the definitive host development takes 16 to 20 days after which ripe eggs and proglottids are found in the faeces. Heavy invasion with these cestodes leads to a severe enteritis in the small intestine. P.A.C.

298—Archives du Muséum National d'Histoire Naturelle, Paris.

a. JOYEUX, C. & BAER, J. G.—" Sur quelques cestodes de France." Ser. 6, XI, 157-171. [1934.]

(a) Joyeux and Baer give a new classification of the Tetrarhynchoidea in 5 families, Aporhynchidae, Dibothriorhynchidae, Eutetrarhynchidae, Floricipitidae and Tentaculariidae. Two new sub-families, Eutetrarhynchinae and Lacistorhynchinae, are created. A brief description is given of *Dibothriorhynchus grossum* (Rud., 1819). There are notes of varying nature on *Hymenolepis balsaci* n. sp. and *H. grisea* v. Ben. from bats, *Taenia serialis*, *T. tenuicollis* var. nov. *armata*, *T. intermedia* Rud., 1809, *T. exilis* Duj., 1845, *Raillietina* (*Raillietina*) *weissi* Joyeux, 1923, var. nov. *valliclusa* and *Tetrabothrium perfidum* n. sp. in *Colymbus cristatus* L. and *C. auritus* L. The authors report that the tapeworms of poultry common in France are *Raillietina* (*Skrjabinia*) *cesticillus*, *Choanotaenia infundibulum* and *Hymenolepis carioca*, less common is *Davainea proglottina*, while *Raillietina* (*R.*) *echinobothrium* and *R.* (*R.*) *tetragona* occur in Central France but are unknown or rare in the region around Paris. R.T.L.

299—Archives of Pathology.

a. FAUST, E. C., WELLS, J. W., ADAMS, C. & BEACH, T. D.—" Experimental studies on human and primate species of Strongyloides. III. The fecundity of Strongyloides females of the parasitic generation." XVIII (5), 605-625. [1934.]

(a) Experiments on dogs and on a rhesus monkey have been undertaken by Faust and his collaborators to study the differences in fecundity of the parasitic females of *Strongyloides stercoralis*. The female worms, after reaching maturity, soon pass into the intestinal mucosa and although at first there is a rapid rise in egg production this gradually decreases to zero on account of the encapsulation and phagocytosis of the worms in the host tissues. Faecal examinations are therefore very unsatisfactory since the host may harbour sufficient worms to give rise to symptoms of chronic strongyloidosis without showing larvae in the faeces. The authors found in 2 of their experimental animals that the number of female worms recovered at autopsy actually exceeded the number of infective larvae introduced and conclude that this can be explained only by assuming that internal infection (hyper-infection) takes place. D.O.M.

300—Archives de Zoologie Expérimentale et Générale.

a. MATHIAS, P.—" Sur quelques Trématodes de poissons marins de la région de Banyuls." LXXV (33), 567-581. [1934.]

(a) Mathias describes and illustrates six trematodes, none of which are new, from marine fishes caught in the neighbourhood of Banyuls (Eastern Pyrenees). R.T.L.

301—Archivio Italiano di Anatomia e Istologia Patologica.

a. BILELLO, A.—" Sulla cisticercosi cerebrale. (Studio clinico, anatomo-patologico e parassitario)." V (1), 97-164. [English, French & German summaries.] [1934.]

(a) A detailed and histological study of 2 cases of cerebral cysticercosis is given by Bilello. Neither case was suspected before death. In the second case more than a thousand vesicles were found in the cortex of the brain and in the fourth ventricle although the symptoms were insignificant. R.T.L.

302—Archivio Zoologico (Italiano).

a. WITENBERG, G.—" Studies on the cestode genus *Mesocestoides*." XX, 467-509. [1934.]

(a) Most of the species attributed to *Mesocestoides* are shown by Witenberg to be unsatisfactory, either falling into synonymy or being *incertae sedis*. He recognized as valid: *M. lineatus* with 3 formae: *coesta*, *lineata*, and *litterata*, and also *M. perlatus* and *M. charadrii*. These are differentiated mainly on shape of segment and distribution of testes. The author discusses each species, together with various life-history experiments, and gives a check-list of the known tetrathyridia arranged under hosts. B.G.P.

303—Archivos do Instituto Biológico de Defesa Agricola e Animal. São Paulo.

a. PEREIRA, C. & VAZ, Z.—" Toto-Montagem de Nematoides; nova e simples tecnica para montagem em balsamo." V, 77-86. [1934.]
b. VAZ, Z. & PEREIRA, C.—" Contribuição ao conhecimento dos nematoides de peixes fluviais do Brasil." V, 87-103. [1934.]

(a) Pereira & Vaz discuss the difficulties involved in the alcoholic dehydration of nematodes and their successful mounting in Canada balsam. They point out that fixation in a medium containing acetic acid predisposes to subsequent dehydration by absolute alcohol and recommend a mixture of 5 per cent. formalin, 3 per cent. acetic acid in saline or distilled water as an excellent fixative for nematodes. They describe a method of mounting in Canada balsam from absolute alcohol which consists of fixing the specimen to a coverslip by means of celloidin, hardening this in 95 per cent. alcohol, clearing in beechwood creosote for 20 minutes and finally mounting direct in natural syrupy Canada balsam. The latter must *not* contain xylol or any other solvent. As a stain for nematodes they recommend Semichon's acetic-carmine with subsequent mounting as above. The paper contains a full summary in English. There are 3 plates of photographs and a bibliography of 14 titles. T.G.

(b) Vaz & Pereira give an account of the nematode parasites obtained from a number of Brazilian river fishes. The following new species are described and figured with numerous tables of comparative dimensions of kindred species. SPIRURIDAE : *Spinitectus rodolphiheringi* n. sp. from the stomach and duodenum of *Pimelodella laterstriga* and *Salminus hilarii*. CUCULLANIDAE : *Cucullanus zungaro* n. sp. from the intestine of *Pseudopimelodus zungaro* and *Paulicea luetkeni* and *C. pauliceae* n. sp. from the intestine of *P. luetkeni*. CAMALLANIDAE : *Procamallanus amarali* n. sp. from the intestine of *Leporinus* sp. and *P. hilarii* n. sp. from the intestine of *Salminus hilarii*. TRICHURIDAE : *Capillaria maxillosa* n. sp. from the stomach of *Salminus maxillosus*. DRACUNCULIDAE : *Philometra baylisi* n. sp. from the body cavity of *Pimelodus clarias*. There are 36 text figures. T.G.

304—Australian Journal of Experimental Biology and Medical Science.

a. JOHNSTON, T. H.—" New trematodes from South Australian Elasmobranchs." XII (1), 25-32. [1934.]

(a) From the fiddler ray, *Trygonorrhina fasciata*, *Calicotyle australis* n. sp. and *Probolitrema rotundatum* n. sp. are described. A second species of *Probolitrema*, *P. clelandi* n. sp. is recorded from the body cavity of the gummy shark, *Mustelus antarcticus*. R.T.L.

305—Berliner Tierärztliche Wochenschrift.

a. GMELIN, W.—" Ein Beitrag zur Frage der Anämie und Kopfkrankheit der Pferde." L (32), 529-531. [1934.]
b. LENTZ, W.—" Wurmerkrankungen des Schweines und ihre Bekämpfung." L (50), 819-821. [1934.]

(a) Gmelin quotes Dobberstein to the effect that both infectious anaemia and encephalitis, in horses, are diseases involving chronic irritation of the reticulo-endothelial system. Gmelin suggests that helminths may be the source of the toxins responsible for this irritation. He describes the intravenous injection of alcoholic extracts of horse ascarids and strongyles into rabbits and discusses the histological picture of liver and spleen *post mortem*. The picture in both cases is one of anaphylaxis, lymphocytosis and eosinophilia and, in the case of ascaris-extract only, haemolysis also. His conclusion appears to be that prophylactic measures offer more hope of success than any attempts at immunization. B.G.P.

(b) Where pigs appear ill-nourished and this is not referable to infectious disease or to poor food, endoparasites should be suspected. Litter and manure should be removed daily and the sties scoured with boiling water containing about 1 lb. of potash-lye to 20 gallons of water. Internal remedies should also be given. Sows about to farrow should be dosed and thoroughly scrubbed with soap and water. R.T.L.

306—Biological Bulletin.

a. STUNKARD, H. W. & NIGRELLI, R. F.—" Observations on the genus *Sterrhurus* Looss, with a description of *Sterrhurus branchialis* sp. nov. (Trematoda, Hemiuridae)." LXVII (3), 534-543. [1934.]

(a) From a detailed study of *Sterrhurus branchialis* n. sp. Stunkard and Nigrelli are of opinion that the form of the copulatory organs is a feature of generic rank. In the absence of knowledge of the life-cycle and larval stages the species identifications must be largely tentative. R.T.L.

307—Biologie Médicale.

a. JOYEUX, C. & BAER, J. G.—" Les hôtes d'attente dans le cycle évolutif des helminthes." XXIV (9), 482-506. [1934.]

(a) In the life-histories of various helminths Joyeux and Baer distinguish a group of hosts between the " intermediate " and the " definitive " hosts in which the larval stages accumulate (thereby infesting the definitive host more intensely) and in which they may or may not undergo stages of development. The phenomenon is connected with host-specificity and in discussing this the authors point out that, when an infective larva enters an inappropriate host, it may become re-encysted there : in some such way the " waiting host " [" hôte d'attente "] has evolved. The phenomenon is traced among the cestodes, nematodes, gordiids, acanthocephala and trematodes. In some cases, active re-encapsulation of the larva by the host may prevent its further development. B.G.P.

308—Boletim Veterinário do Exército. Brazil.

a. COSTA MONTEIRO, A. DA—" Eustrongilose do cão." I (8), 191-193. [1934.]

(a) A specimen of the kidney worm was found by Costa Monteiro in a dog recently imported from Europe to Brazil. R.T.L.

309—Boletín de la Universidad de Granada.

a. LÓPEZ-NEYRA, C. R.—" Sobre la clasificación que propusimos de 'Davainea S.L.' Respuesta a Fuhrmann." VI (27), 47-55. [1934.]

(a) López-Neyra reviewed the Davainea group of cestodes in a series of papers in 1931 and 1932. His proposed classification was critically considered by Baer (1931) and Fuhrmann (1932). López-Neyra here defends his work and takes exception to the methods of his critics. B.G.P.

310—Bollettino di Zoologia.

a. MACCAGNO, T.—" Osservazioni intorno a *Clinostomum complanatum* Rud." V, 45-60. [1934.]

(a) In 1932 Maccagno described metacercariae of *Clinostomum complanatum* from *Cobitis taenia*. Attempts to infect *Anas boschas* were negative, but he has since found a specimen of *Ardea cinerea* in which 48 of these flukes, mostly adult, were attached to the pharyngeal mucosa. From this material the author gives a detailed and illustrated redescription of *C. complanatum* and rejects the view of Baer [see Helm. Abs., Vol. II, No. 283b] that it is identical with *C. marginatum*. B.G.P.

311—British Birds.

a. LOWE, P. R.—" On a flock of razorbills in Middlesex found to be infested with intestinal flukes. With a parasitological report by H. A. Baylis." XXVIII (7), 188-190. [1934.]

(a) Enormous numbers of Holostomes belonging to the species *Cotylurus platycephalus* were the cause of a heavy mortality in razorbills at the Littleton Reservoir, England. The infection is an unusual one as this fluke normally occurs in birds which eat fresh-water fish. Baylis gives a parasitological report on the material which has been described more fully by him (see *Veterinary Record*, XIV (49), 1472-1473). R.T.L.

312—British Journal of Surgery.

a. CHRISTOPHERSON, J. B. & WARD, R. O.—" Bilharzia disease in England: the cystoscopic appearance of the bilharzia bladder before and after intravenous injections of sodium antimony tartrate." XXI (84), 632-636. [1934.]

(a) The subtitle sufficiently describes the nature of the paper. None of the cases referred to were contracted in England. In this respect the title " Bilharzia disease in England " is misleading. R.T.L.

313—Bulletin de l'Académie R. de Belgique. Classe des Sciences.

a. DE WAELE, A.—" Recherches sur les migrations des cestodes. IV. Étude de l'infection de l'hôte définitif par une larve du type cénure." Ser. 5, XX (10), 910-921. [1934.]

(a) In continuation of his previous work [see Helm. Abs., Vol. II, No. 332a] De Waele has examined the action of artificial gastric and intestinal juices on *Coenurus cerebralis*. Scolices will not evaginate in gastric juice, but in time they are digested by it, unlike *Cysticercus pisiformis*. This difference is due to a difference in structure which is fully explained. B.G.P.

314—Bulletin of the Academy of Sciences of the United Provinces of Agra and Oudh, India. (Continued as No. 378.)

a. MEHRA, H. R.—" New blood flukes of the family Spirorchidae Stunkard from Indian fresh-water tortoises with discussion on the synonymy of certain genera and the relationships of the families of blood flukes. Part II." III (4), 169-196. [1934.]

b. SRIVASTAVA, H. D.—" On new trematodes of frogs and fishes of the United Provinces, India. Part III. On a new genus *Mehraorchis* and two new species of *Pleurogenes* (Pleurogenetinae) with a systematic discussion and revision of the family Lecithodendriidae." III (4), 239-256. [1934.]

(a) Four new species belonging to a new genus, *Plasmiorchis*, are described by Mehra from Indian fresh-water tortoises. These are: *P. orientalis*, *P. pellucidus* and *P. obscurum* from *Kachuga dhongoka* and *P. hardellii* from *Hardella thurgi*. A classification of the family Spirorchidae is also given. D.O.M.

(b) *Mehraorchis ranarum* n. g., n. sp. of the sub-family Pleurogenetinae is described by Srivastava from *Rana cyanophlyctis* together with two new species, *Pleurogenes orientalis* and *P. sitapurii*, also from the same host. D.O.M.

315—Bulletin. Animal Health Station, Yeerongpilly, Queensland.

a. ROBERTS, F. H. S.—" The large roundworm of pigs, *Ascaris lumbricoides* L., 1758. Its life history in Queensland, economic importance and control." No. 1, 81 pp.

(a) The first record of Ascaris in the pig in Australia was made in 1892 while in Queensland it was first noted in literature in 1916. Roberts has found that at least 20 per cent. of the 46,433 pigs examined in Queensland were infested. He notes that heavily infested pigs do not reach bacon weight until 9 to 12 months old. A series of experiments were made on the egg, and on the migration of larvae in experimental animals. Boiling Kerol solution proved the most efficient ovicide. Embryonated eggs are not infective until they are at least 18 days old. The questions of age and acquired immunity are discussed. Ascaris is most pathogenic in pigs 4 to 5 months old and is not a serious parasite for older pigs. The pathology of experimental infestations has been investigated and the conclusion reached is that the pathogenicity of the larvae is due to trauma and a toxaemia. Roberts recommends two treatments, at a ten-day interval, with oil of chenopodium and castor oil. A modification of the McLean County System of swine sanitation is suggested. R.T.L.

316—Bulletin. Arkansas Agricultural Experiment Station.

a. BLEEKER, W. L. & SMITH, R. M.—" Relative efficiency of vermifuges for poultry." No. 312, pp. 33-34. [1934.]

(a) Bleeker administered turpentine and oil directly into the gizzard of 31 fowls to determine its action as a vermifuge against gizzard worms, small cestodes and Capillaria. He records " fair efficiency " but gives no details as to the exact number or species of worms eliminated.

In conjunction with Smith he has tested various vermifuges under field conditions. He treated various groups of hens with kamala and black leaf pellets, both separately and together but failed to find any significant differences between the numbers of parasites harboured by any one group as compared with its control. P.A.C.

317—Bulletin Biologique de la France et de la Belgique.

a. JOYEUX, C., BAER, J. G. & TIMON-DAVID, J.—" Recherches sur les trématodes du genre *Brachylaemus* Dujardin (syn. *Harmostomum* Braun)." LXVIII (4), 385-418. [1934.]

(a) Joyeux, Baer and Timon-David describe a species of *Brachylaemus* found in the sparrow, *Passer domesticus*, around Marseilles. Experimentally they have infected pigeons with the same species but have been unable to infect domestic fowls or laboratory mice. Specimens from the sparrow and from the pigeon differ considerably, showing that caution is necessary in the creation of new species of this genus. By careful comparison with earlier descriptions and other species, the fluke is shown to be *B. fuscatus* (Rud.). The life-cycle has been worked out experimentally in the snail *Helix pisana*, in whose liver-pancreas the cercaria develops, migrating then to the renal gland of the same or another snail, where it transforms into a metacercaria. Snails become infected by swallowing eggs during the autumn rains and birds during the following spring or early summer when snails form part of their diet. E.M.S.

318—Bulletin of the College of Agriculture and Forestry. University of Nanking.

a. SHEN, T. H., TAI, S. E. & CHIA, W. L.—"A preliminary report on the inheritance of nematode resistance and length of beak in a certain wheat cross." (New series), No. 19, 17 pp. [In English : Chinese résumé.] [1934.]

(a) Shen, Tai and Chia crossed Kanred wheat, said to be resistant to the " cockle " nematode, *Anguillulina tritici*, with a selected native variety (unnamed) which was very susceptible to the parasite. Kanred has a long beak and the native variety a short one.

The paper is largely occupied with tables and statistical data on the inheritance of length of beak in F_1, F_2 and F_3 generations of the cross. The reaction of the plants to the parasite were also examined and some families in the F_3 generation were found to be free from it. Although no linkage could be traced between length of beak and resistance to the nematode the fact that a few plants in both the F_2 and the F_3 were free or only slightly affected suggests a certain relationship between these characters. T.G.

319—Bulletin of the Fan Memorial Institute of Biology (Zoology).

a. HSIUNG, T. S.—" Notes on two new lung flukes from the Chinese frogs." v (1), 1-8. [1934.]
b. HSU, Y. C.—" A new species of cat liver fluke from Soochow (Opisthorcidae, Trematoda)." v (1), 11-16. [1934.]

(a) Hsiung gives morphological descriptions of 2 flukes from Chinese frogs. *Haematoloechus tientsinensis* n. sp., from the lungs of *Rana nigromaculata* collected around Tientsin, closely resembles *H. variegatus* but differs from it by its shorter pre-acetabular region, cuticular spines, ratio between oral sucker and acetabulum, medially placed ovary and smaller size. *H. nanchangensis* n. sp., from the lungs of *R. plancyi* from small pools in Nanchang, is distinguished from all other described species of the genus by its straight voluminous extra-caecal longitudinal folds, the more or less symmetrically placed testes, large cuticular spines and large sized eggs. J.N.O.

(b) Hsu examined more than 100 cats from Soochow and found in only one animal 10 specimens of *Metorchis felis* n. sp. in the gall bladder and bile ducts. One of the 10 flukes was an immature adult and the author gives morphological descriptions of both immature and mature forms, including a table of measurements of all the specimens. The new species is mentioned as closely related to the European *M. albidus*. It is of interest to note that the cat, from which these flukes were obtained, also harboured more than 1,000 *Clonorchis sinensis*. J.N.O.

320—Bulletin Mensuel. Office Internationale des Épizooties.

a. SKRIABINE, K. J. & SCHULZ, R. S.—" La lutte contre les moniézioses. Invasions des moutons par les vers rubanés." VIII (1), 354-378. [1934.]
b. SKRIABINE, K. J. & SCHULZ, R. S.—" La lutte contre les helminthoses des volailles." VIII (1), 379-413. [1934.]

(a) Skriabine and Schulz suggest that lambs should be treated 30 to 40 days after being put out to pasture for eliminating Moniezia. $CuSO_4$ followed by a saline purge has a specific action on Moniezia, two doses at

a 10-day interval being 98 per cent. effective, in the pre-imaginal stage of the tapeworm. Preventive measures are difficult to institute until the life-cycle has been worked out. They survey the work that has been done in this respect and mention Skriabine's theory that the sheep acts as both definitive and intermediate host. P.A.C.

(b) Skriabine and Schulz consider briefly the helminth parasites found in the chicken, duck, goose, pigeon and turkey. There have been recorded 12 trematodes, 5 cestodes and 10 nematodes from these hosts in U.S.S.R. Inflammatory reactions are generally present in helminthiasis and the parasites may also cause obstructions, rupture, chronic enteritis, pneumonia or mechanical lesions as a result of their holdfast organs. They review the methods of treatment and their efficiency and stress the importance of prophylaxis, citing briefly the most important methods. P.A.C.

321—Bulletin du Musée Royal d'Histoire Naturelle de Belgique.

a. SCHUURMANS STEKHOVEN, Jr., J. H.—"*Heterodera marioni* (Cornu 1879) Goodey 1932 (syn. *Heterodera radicicola* (Greeff) Müller) au Congo belge." x (36), [Reprint 5 pp.] [1934.]

(a) Schuurmans Stekhoven records the presence of *Heterodera marioni* in the roots of plants belonging to the families Sterculiaceae, Tiliaceae and Caricaceae received from the Belgian Congo. *Acrobeles ciliatus* was also present in one case. Comparative severity of attack in ligneous and succulent roots and in cases of recent and long standing infections is commented on, and diversity in the proportions of neck and body length of the females is described and figured. M.J.T.

322—Bulletin of the Ophthalmological Society of Egypt.

a. BARRADA, M. A.—"Filaria in macula." xxvii, 63-67. [1934.]

(a) A case of filarial infection in the macula is reported. A provisional diagnosis of *Onchocerca volvulus* was made by Prof. Khalil on the basis of nodules seen with the ophthalmoscope at equal distances along the edge of the living worm. R.T.L.

323—Bulletin of the Oregon Agricultural Experiment Station.

a. SHAW, J. N., SIMMS, B. T. & MUTH, O. H.—"Some diseases of Oregon fish and game and identification of parts of game animals." No. 322, 23 pp. [1934.]
b. SHAW, J. N.—"Lungworms (*Dictyocaulus filaria* Rudolphi) in sheep and goats." No. 327, 12 pp. [1934.]

(a) Shaw, Simms and Muth report on the incidence and life-history of *Nanophyetus salmincola*, a dangerous parasite of dogs and foxes, which develop "salmon poisoning" after feeding on fish harbouring the larvae. They find the cysts present in enormous numbers in many salmonids, especially in the muscle and kidney, although no harmful effects are apparent.

Other fish parasites are *Dibothrium cordiceps*, for which are recorded three new salmonid intermediate hosts, and a new avian definitive host; an intestinal fluke, *Crepidostomum cooperi*; and an unidentified fin-infesting *Gyrodactylus*. All three are responsible for heavy losses in hatcheries and

ponds. *Contracaecum spiculigerum*, a larval *Eustrongylides* sp. and an unidentified abdominal " round worm " were found in various species, also numerous Acanthocephala and several non-helminthic pests.

No bird parasites of any importance were found. Seven helminthic species are recorded from deer, including one case in which small tapeworm cysts occurring in large numbers in the muscles were fed to a dog, which at autopsy yielded 55 mature *Taenia krabbei*. E.M.S.

(b) In this Station Bulletin No. 327 issued by the Agricultural Experiment Station, Oregon, Shaw gives an account of studies on *Dictyocaulus filaria* in sheep and goats. He succeeded in infecting sheep, lambs, a kid and guinea pigs. The parasites lived only a short time after reaching maturity. Attempts to destroy the worms *in vitro* were unsuccessful, while the accepted methods of medication in the living animals did not pass experimental tests. R.T.L.

324—Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord.

a. LIÈVRE, H.—"Au sujet de l'echinocoque du chien." XXV (3), p. 106. [1934.]

(a) In Algeria dogs naturally infected with *Taenia echinococcus* usually harbour only 1 to 3 tapeworms—rarely over 100, but an experimentally infected dog gave over 3,000 from 50 cm. of small intestine. This illustrates the danger of infection from uncontrolled abattoirs for each terminal segment carries over 50 eggs. R.T.L.

325—Bulletin de la Société Medico-Chirurgicale de l'Indochine.

a. GUY, R.—" Parasitisme intestinal à Luang-prabang (Haut-Laos)." XII (10), 934-939. [1934.]

(a) This paper deals with the incidence of hookworm, ascaris and trichuris in man and blood changes in a series of cases. R.T.L.

326—Bulletin de la Société de Pathologie Exotique.

a. TISSEUIL, J.—" Processus de destruction des microfilaires vivantes par l'épiploon chez la sarigue philander." XXVII (8), 735-737. [1934.]

(a) In an opossum infected with a filarial worm, Tisseuil has found the omentum covered with minute granulations and with some larger cystic bodies. The cysts contained motile microfilariae (and occasionally adult worms) while the smaller granulations either contained remains of dead microfilariae or consisted purely of granulation tissue. The author regards this as evidence of a process of successive encystment and destruction of microfilariae on the part of the host. B.G.P.

327—Bulletin de la Société Zoologique de France.

a. STUNKARD, H. W.—" The life history of *Typhlocoelum cymbium* (Diesing, 1850) Kossack, 1911 (Trematoda, Cyclocoelidae). A contribution to the phylogeny of the Monostomes." LIX, 447-466. [1934.]

(a) Stunkard finds that the cyclocoelid *Typhlocoelum cymbium*, adult in *Podilymbus podiceps*, lays eggs containing a fully formed miracidium in which the redia lies. Rediae, and at a later stage encysted metacercariae, were found, after experimental infection, in *Helisoma trivolvis*. B.G.P.

328—Bulletin des Travaux Publiés par la Station d'Aquiculture et de Pêche de Castiglione.

a. DOLLFUS, R. P.—" Sur une larve de Tétrarhynque enkystée chez un *Dentex macrophthalmus* Cuv. Val." Année 1932, 2 fasc., [Reprint 11 pp.] [1934.]

(a) In a portion of intestine of a fish, *Dentex macrophthalmus*, caught off the coast of Algiers, Dollfus found numbers of encysted tetrarhynch cestode larvae. He describes and figures these in detail, gives measurements of vesicle, larvae, contractile bulbs and hooks, and ends with a discussion on the systematic position of the larvae which he was unable to classify satisfactorily in any known genus of tetrarhynch cestode. T.G.

329—Bulletin. Wisconsin Agricultural Experiment Station.

a. DIRECTOR'S REPORT.—" Fur animal disease survey made." No. 428, pp. 7-8. [1934.]

(a) Tabulated, by Hadley & Graves, in order of seriousness the parasites of 145 silver foxes and cross foxes in Wisconsin are : (i) *Eucoleus aerophilus* 43 per cent. ; (ii) *Toxocara canis* 28 per cent. and *Uncinaria stenocephala* 75 per cent. ; (iii) *Capillaria plica* 58 per cent. ; and (iv) *Taenia pisiformis* 3 per cent. Suggestions are made for the feeding of foxes in captivity. R.T.L.

330—Canadian Field Naturalist.

a. PARNELL, I. W.—"Animal parasites of North-east Canada." XLVIII (7), 111-115. [1934.]

(a) Parnell gives an account of a survey of the internal parasites of domestic and wild animals in north-east Canada carried out by the Institute of Parasitology, McGill University, Montreal. The paper deals chiefly with the parasites found in dogs and also refers to the incidence of *Oxyuris vermicularis* and the trichina worm among the Eskimos. D.O.M.

331—Canadian Medical Association Journal.

a. PORTER, A.—" Remarks on intestinal parasites in Montreal, and relation of *Entamoeba histolytica* to colitis." XXX (2), 134-136. [1934.]
b. LUNEY, F. W.—" *Hymenolepis diminuta* (rat tapeworm) in man, with the report of case." XXX (4), 385-386. [1934.]

(a) Of 139 patients in the Royal Victoria Hospital, Montreal, 1 had *Taenia saginata*, 2 *Diphyllobothrium latum*, 1 *Hymenolepis nana*, 2 *Trichuris trichiura* and 1 *Ascaris lumbricoides*. *Enterobius vermicularis* was observed in one private case. R.T.L.

(b) Luney reports a case of infestation with *Hymenolepis diminuta* in a female child, aged 19 months, who was brought to St. Joseph's Hospital, London, Ontario. Treatment with an anthelmintic resulted in the evacuation of 40 worms amongst which 10 had heads. The author discusses the life-cycle of the worm and gives the geographical distribution of the 66 cases previously reported in the literature and observes that there is no record of a previous case in Canada nor of one so heavily infested. J.N.O.

332—Ceylon Journal of Science. Section D. Medical Science.

a. SWEET, W. C. & DIRCKZE, H. A.—"A filariasis survey of the Southern Province of Ceylon." III (3), 177-182. [1934.]

(a) An examination of the night blood of 3,371 persons in the Southern Province of Ceylon gave 163 positive for microfilariae presumed to be those of *Filaria bancrofti*. The total filariasis rate for the Province was 5·8± 0·3 per cent. The heaviest infection occurred in villages north of Tangalla and in the Fort Ward of the Municipality of Galle. The vector was not determined. R.T.L.

333—Circular. United States Department of Agriculture.

a. KING, C. J. & HOPE, C.—" Field practices affecting the control of cotton root knot in Arizona." No. 337, 13 pp. [1934.]

(a) King and Hope describe the occurrence of *Heterodera marioni* in cotton growing districts of Arizona, and the symptoms and incidence of infection in Pima and Acala cottons.

Pima cotton suffers more severely than Acala. Seedling stands are reduced and mature plants may succumb late in the season. Rotation with alfalfa was found to keep the disease in check although it did not eradicate the nematodes. Two years clean fallow proved more satisfactory, in that it reduced the nematode population. Early irrigation appeared to reduce the severity of the disease in Pima cotton. M.J.T.

334—Comptes Rendus Mensuels des Séances de l'Académie Polonaise des Sciences et des Lettres. (Classe des Sciences Mathématiques et Naturelles.)

a. JANICKI, M.—" Contribution à la biologie de *Dioctophyme renale* Goese [Goeze]." No. 3, p. 5. [1934.]

(a) Janicki records *Dioctophyme renale* from the thorax of a cat, the first record from this host, and makes some observations on copulation and on the spermatozoa of this species. B.G.P.

335—Comptes Rendus des Séances de l'Académie des Sciences.

a. JOYEUX, C., BAER, J. G. & CARRÈRE, P.—" Recherches sur le cycle évolutif d'*Euryhelmis squamula* (Rud.)." CXCIX, [Reprint 3 pp.]

(a) Joyeux, Baer and Carrère, in a study of the life-cycle of *Euryhelmis squamula*, found about 400 tadpoles and young adults of *Rana esculenta*, collected in the environs of Marseilles, without exception parasitized. Adult frogs were free from infestation. The metacercariae occurred in subcutaneous cysts over the entire body and in the tail. As many as 80 cysts were found in a young frog. With the exception of 2 young cats, 3 and 7 months old respectively, the experimental feeding of metacercariae to several vertebrates gave negative results. In the cat development was very rapid and two-thirds of the flukes recovered from one host 4 days after infestation already had eggs within the uterus. In the second cat eggs appeared in the faeces after 15 days and adult flukes were obtained at autopsy from the terminal 8 centimetres of the small intestine. J.N.O.

336—Compte Rendu Sommaire des Séances de la Société de Biogéographie.

a. GHESQUIÈRE, J.—" Sur la répartition géographique de deux vers syngames observés au Congo belge." No. 89, pp. 10-12. [1934.]

(a) *Syngamus trachea* from *Meleagris gallopavo* and *Syngamus hippopotami* in the hippopotamus are recorded from the Belgian Congo. R.T.L.

337—Copeia.

a. WOODBURY, L. A.—" Notes on some parasites of three Utah reptiles." No. 1, pp. 51-52. [1934.]
b. KRULL, W. H.—" *Cercaria bessiae* Cort and Brooks, 1928, an injurious parasite of fish." No. 2, pp. 69-73. [1934.]

(a) Two species of *Physaloptera* and one of *Oochoristica* are reported from Utah reptiles. R.T.L.

(b) Small fry usually die in 3 days after being subjected to infection with large numbers of the cercaria *C. bessiae*. The parasites may cause " pop-eye." *Apomotis cyanellus* is reported a new second intermediate host for *Neascus ambloplitis*. R.T.L.

338—Crónica Médico-Quirúrgica de la Habana.

a. KOURÍ, P., BASNUEVO, J. G. & ARENAS, R.—" Un nouvel emploi d'emetine en parasitologie." LX, 427-430. [1934.]

(a) Cases of the successful use of emetine hydrochloride in human infections with *Fasciola hepatica* are cited. R.T.L.

339—Deutsche Landwirtschaftliche Presse.

a. MEHL & LÜHRS.—" Zur Bekämpfung der Leberegelseuche." LXI (10), p. 122. [1934.]

(a) This brief article concludes a controversy regarding the control of liver-fluke [see Helm. Abs., Vol. II, Nos. 360a, 360b]. In reply to Lührs' contention that control can be effected by the use of artificial fertilizers, Mehl objects that this is purely hypothetical since Lührs has not yet found the snail in his district. Mehl withdraws from the discussion with some terse comments. Briefly responding, Lührs complains that Mehl is ignoring his articles in this periodical and instead is referring to articles in another [see Helm. Abs., Vol II, Nos. 67a, 226a]. B.G.P.

340—Deutsche Medizinische Wochenschrift.

a. WIGAND, R.—" Klinisch-parasitologische Beobachtungen." LX (13), 461-464. [1934.]
b. ABDULKADIR-LUTFI.—" Xanthochromie und Darmparasiten." LX (39), 1472-1475. [1934.]

(a) Previous records of helminthiasis in man in East Prussia have been concerned with healthy, or at least ambulatory, persons. Wigand has investigated the incidence of helminthiasis in 1,000 adults and 330 children

suffering from various diseases, and here discusses some of his results. Thus, ascaris is commonest in patients with skin diseases, after which come respiratory diseases and then bacterial infections. Only 27 per cent. of his cases showed an eosinophilia (4%+). B.G.P.

(b) Abdulkadir-Lutfi points out that carotinoid pigments are absorbed by animals from vegetable matter in the intestine in varying amounts. Both xanthophyll and carotin are absorbed by man in increased amounts when such parasites as ascaris and necator are present. These pigments are normally removed from the blood by the cells of the reticulo-endothelial system, but under certain conditions the cells of the skin may show an affinity for them, and xanthoderma results. B.G.P.

341—Deutsche Pelztierzüchter.

a. PRIESNER, A.—" Das Eingeben von Wurmkapseln an Füchse." IX (13), 254-256. [1934.]

(a) Priesner, after a brief introductory discussion of anthelmintic treatment in foxes, elaborates a method of administration of worm capsules for which he claims great success. The apparatus consists of two instruments, viz., a wooden cross-bar perforated by an elliptical aperture and a pill gun. The wooden bar is fixed crosswise in the animal's mouth and the pill gun introduced through the hole in the wood into the oesophagus when the piston is released and the capsule ejected. An assistant holds the fox by its legs and head during this operation, which has the advantage of rapidity. A modification of the method for use in young foxes is described. S.G.S.

342—Illinois Biological Monographs.

a. HOPKINS, S. H.—" The papillose Allocreadiidae: a study of their morphology, life histories and relationships." XIII (2), 7-80. [1934.]

(a) An analysis of the morphology and ontogeny of the papillose genera and species of the Allocreadiidae indicates that *Crepidostomum* is more closely related to *Allocreadium* than are some of the genera now included in Allocreadiinae and that *Bunodera* and *Megalogonia* are more closely related to *Crepidostomum* than some of the genera now included in the Allocreadiidae are related to each other. The species of *Crepidostomum*, *Megalogonia* and *Bunodera* are redescribed. There is a short discussion of the life-history and excretory system of the Allocreadiidae. R.T.L.

343—Indian Journal of Medical Research.

a. CHOPRA, R. N., MUKHERJEE, S. N. & RAO, S. S.—" Studies on protein fractions of blood sera. Part I. Normal and filarial blood sera." XXII (1), 171-181. [1934.]

(a) The surface tension, viscosity and buffer action of sera from the blood of filarial patients show little if any departure from normal, but the total globulin, especially the euglobulin is increased in filarial patients while the albumin decreases. In consequence of this the ratio of globulin to albumin is increased. R.T.L.

344—Japanese Journal of Zoology.

a. YAMAGUTI, S.—" Studies on the helminth fauna of Japan. Part 4. Cestodes of fishes." VI (1), 1-112. [1934.]
b. YOSHIDA, S.—" Observations on *Gnathostoma spinigerum* Owen 1836, cause of esophageal tumor in the Japanese mink (*Lutreola itatsi itatsi* Temminck 1844), with especial reference to its life history." VI (1), 113-122. [1934.]
c. IWATA, S.—" Some experimental studies on the regeneration of the Plerocercoid of Manson's tapeworm, *Diphyllobothrium erinacei* (Rudolph), with special reference to its relationship with *Sparganum proliferum* Ijima." VI (1), 139-158. [1934.]

(a) Forty-seven new cestodes from fishes are named by Yamaguti. In the family Bothriocephalidae three new genera are made, viz., *Onchodiscus* (*O. sauridae* n. sp., t. sp.) *Parabothriocephalus* (*P. gracilis* n. sp., t. sp.) and *Parabothriocephaloides* (*P. segmentatus* n. sp., t. sp.). A number of aberrant forms and several larval stages are described. R.T.L.

(b) Over 50 per cent. of the Japanese mink in the vicinity of Osaka are infected with *Gnathostoma spinigerum* in the oesophageal region. Development occurs in various species of cyclops but larvae are not transmitted to gold fishes. When infected cyclops were fed to cats no lesions were found in the alimentary canal but macroscopically the lungs showed patches of severe inflammation on the surface. R.T.L.

(c) By experiments on the plerocecroids of *Diphyllobothrium erinacei* Iwata has endeavoured to elucidate the problem of the branched form known as *Sparganum proliferum*. He finds that by incising the bodies and transplanting the injured plerocercoids to rabbits or guinea-pigs some assumed branched forms in the intermediate host, but no adults were recovered when these were fed to dogs. Headless plerocercoids were incapable of passing through the intestinal wall. Injured forms can reproduce asexually. Owing to the poor tissue differentiation it is not possible to define the exact relationship of *S. proliferum* to other pseudophyllid species. R.T.L.

345—Journal of Agricultural Research.

a. STEINER, G. & SCOTT, C. E.—" A nematosis of *Amsinckia* caused by a new variety of *Anguillulina dipsaci*." XLIX (12), 1087-1092. [1934.]

(a) From galled fruits of *Amsinckia intermedia*, a wild member of the borage family growing in California, Steiner & Scott describe a new variety of the stem eelworm, *Anguillulina dipsaci*.

Adults of the new variety have about the same length as those from narcissus and potato but the body is thicker and has a more spindle-shaped appearance. Other variations from the common form are the more posterior position of the vulva, the prominent lips of the latter, the very short post-vulvar uterine sac and the fact that the bursal wings extend almost to the tip of the male tail. The new variety is resistant to desiccation and pre-adult larvae have been revived in water after drying for 4 years 4 months. The paper is illustrated with 1 photograph and many line drawings. T.G.

346—Journal of the American Pharmaceutical Association.

a. BUTZ, L. W. & LA LANDE, Jr., W. A.—" Anthelmintics. I. The effect of hydrogen peroxide and some oxygenated terpene hydrocarbons upon *Ascaris lumbricoides*." XXIII (11), 1088-1094. [1934.]

(a) Butz and La Lande have demonstrated by experiments *in vitro* that a 0·1 per cent. solution of hydrogen peroxide is very toxic to *Ascaris lumbricoides*. Ascaridole, itself a peroxide, showed greater toxicity than would be predicted if its action were due solely to the generation of hydrogen peroxide. Substances of pronounced toxicity to *Ascaris lumbricoides* were formed when oxygen or air was passed over α-pinene, turpentine or δ-limonene. Preliminary examination of these substances suggested that the active principles were not peroxides. R.H.H.

347—Journal of the Chosen Medical Association.

a. CHO, K.—" Ueber den pathologisch-anatomischen und parasitologischen Befund eines Falles der heterotopisch parasitierten Paragonimiasis." XXIV (7), 68-70. [1934.]

(a) A case is recorded by Cho in which eggs and adult specimens of *Paragonimus* were found in the lungs, mesentery, urinary bladder, and occipital lobes of the cerebrum. A parasitic nodule was also found in the appendix fibrosa hepatis. R.T.L.

348—Journal of Home Economics.

a. ABBOTT, O. D.—" The effect of improved diet on children with a moderate degree of hookworm infection." XXVI, 577-580. [1934.]

(a) Abbott finds that children fed an abundant diet are better able to withstand the effects of hookworm disease than those fed a spare diet. This difference was particularly noticeable in regard to the number of red cells and the percentage haemoglobin in the blood. P.A.C.

349—Journal of the Japanese Society of Veterinary Science.

a. SUGIMOTO, M.—" On the Filaria from the Formosan domesticated birds." XIII, 261-264. [1934.]

b. ONO, S.—" On the life-history of *Plagiorchis* (*Lepoderma*) and *Prosthogonimus* of dragon-flies found in the vicinity of Mukden." XIII, 267-279. [In Japanese: English summary pp. 279-280.] [1934.]

(a) A new genus *Oshimaia* in the family *Philometridae* is established for *O. taiwana* Sugimoto, 1919 which occurs in subcutaneous tumours in young ducks in Northern Formosa. A redescription of *Microfilaria seguini* from the hen is illustrated. R.T.L.

(b) The first intermediate host of a *Plagiorchis* species is *Lymnaea* sp. *Plagiorchis japonicus* is recorded for the East in crows. R.T.L.

350—Journal of the Royal Army Veterinary Corps.

a. STEEVENSON, G. F.—" The treatment of gastric habronemiasis in equines." VI (1), 29-30. [1934.]

(a) For habronemiasis in horses Steevenson uses 15 to 20 cc. of carbon disulphide administered by a tube and preceded by two lavages with one ounce of sodium bicarbonate dissolved in 1 gallon of water and heated to 105°F. R.T.L.

351—Journal of the Royal Naval Medical Service.

a. DUDLEY, S. F.—" Tape worm cysticercus epilepsy as illustrated by a case in a naval rating." xx (2), 179-181. [1934.]

(a) Dudley gives clinical notes on epilepsy, as illustrated by a case in a naval rating, and shows that the diagnosis is overwhelmingly in favour of *Cysticercus cellulosae* being the cause of the disability. Points in favour of the argument are : the age of onset, 40 years ; the place of origin, China ; infestation with an adult *Taenia solium* ; X-ray appearance of calcified cysts ; variability of the seizures ; lack of any response to anti-syphilitic treatment ; lack of any family history of a neuropathic taint. Points in favour of cerebral syphilis are : positive Wassermann reaction in blood and cerebrospinal fluid ; syphilitic periostitis of the right tibia. J.N.O.

352—Journal of Tropical Medicine and Hygiene.

a. BARSOUM, H.—" The bilharzial appendix." xxxvii (24), p. 387. [1934.]
b. GIRGES, R.—" The clinical aspect of ascariasis." xxxvii (24), 387-392. [1934.]

(a) Barsoum concludes from a study in Egypt of 53 cases of appendicitis, in which there were bilharzia eggs in 10 cases, that bilharziasis of the appendix is merely an accidental concomitant. R.T.L.

(b) Girges considers in detail, but without any reference to previously published works, the clinical conditions associated with and attributable to ascaris infection in man. R.T.L.

353—Journal of the University of Bombay.

a. KARVE, J. N.—" Two new species of the genus *Diplotriaena* (Nematoda) parasitic in the common Indian myna (*Acridotheres tristis tristis*)." ii (5), 75-81. [1934.]

(a) Karve describes and figures *Diplotriaena acridotherei* n. sp. and *D. nagpurensis* n. sp., both from the body cavity of the Indian myna. B.G.P.

354—Journal of the Washington Academy of Sciences.

a. KRULL, W. H.—" New experimental hosts for *Brachylaemus virginiana* (Dickerson) Krull." xxiv (11), 483-485. [1934.]
b. CHITWOOD, B. G. & CHITWOOD, M. B.—" The histology of nemic esophagi. III. The esophagus of *Oesophagostomum dentatum* (Rudolphi)." xxiv (12), 557-562. [1934.]

(a) *Brachylaemus virginiana* a fluke normally found in the opossum can infect the dog, cat, white rat and chicken when these are fed with the metacercariae found in *Polygyra thyroides*. Krull remarks on the significant differences in the sizes of the adults recovered from the different species of experimental hosts. R.T.L.

(b) In their study of the oesophagi of nematodes, Chitwood and Chitwood present a third paper which deals with the histology of the oesophagus of *Oesophagostomum dentatum*. After describing the gross morphology of the adult oesophagus the authors deal with the distribution of the nuclei found in the following regions : precorpus, postcorpus, isthmus, prevalvar

region, valvar and postvalvar region. The various types of nuclei found are described and figured in detail. In regard to the oesophageal glands it is to be noted that there is no proof of the presence of functional sub-ventral oesophageal glands. T.G.

355—Jugoslovenski Veterinarski Glasnik.

a. SOKOLA, D.—"Liječenje helminthijaze kid konja sa carboneum tetrachloratum." XIV, 45-49. [1934.]

(a) Carbon tetrachloride gave Sokola good results against Oxyuris, Ascaris and Strongylidae in horses. The dose used was 0·25 cc. per Kg. body weight, given by stomach tube in milk, water or liquid paraffin. No symptoms of poisoning followed a dose of 0·5 cc. per Kg. R.T.L.

356—Kleintier und Pelztier.

a. FRITZSCHE, R.—"Zur Parasitenbekämpfung bei Pelztieren." X (10/11), 170-171. [1934.]
b. LAMPE, W.—"Luftröhrenwürmer beim Geflügel." X (18/19), 257-259. [1934.]

(a) Fritzsche catalogues a number of helminth parasites together with protozoa and arthropods which are liable to parasitize fur bearing animals. Diagnosis in the case of helminths can only be satisfactorily made by faecal examination. Medical treatment with recognized drugs should be coupled with strict preventive measures such as thorough disinfection of runs and the burning of all droppings and infective material. The stock should be removed for a time from infected paddocks in order to prevent re-infection by intermediate hosts when these occur in the life-history of the helminth. P.A.C.

(b) Lampe describes the symptoms and diagnosis of syngamiasis in poultry. Treatment is unsatisfactory but control measures will materially reduce the incidence of the disease. He suggests thorough cleansing of houses and batteries, isolation of sick birds and the exclusion of young birds from damp pastures where the infective stages of the worm abound. P.A.C.

357—Lancet.

a. BIGGAM, A. G. & GHALIOUNGUI, P.—"Ancylostoma anaemia and its treatment by iron." CCXXVII (5789), 299-304. [1934.]

(a) Doses of iron correct hookworm anaemia even when the patient is still harbouring the worms, but their removal alone produces little or no change in the blood picture. The clinical effect of various preparations given by various routes is discussed. R.T.L.

358—Maanedsskrift for Dyrlaeger.

a. NIELSEN, F. W.—"Om Oksetintens Forekomst i Danmark i Tiaaret 1923-32." XLVI, 399-408. [1934.]

(a) Nielsen discusses the incidence of bovine cysticercosis in Denmark in the decade 1923 to 1932 and comments upon control measures.

Trichinella last appeared in Denmark in 1929, and *C. cellulosae* still earlier, but *C. bovis* is relatively common and seems increasing in some localities.

The distribution of infected carcasses is tabulated under years and under counties, and for each county the number of communes implicated is tabulated under number of infected carcasses per commune over the decade. This brings out the quite localized nature of the distribution. The maximum county-incidence is 1·21 per cent. of inspected cattle, in Sønderborg.

Nielsen points out that infected carcasses can elude detection either because the cysts are absent from the examined muscles (masseters and heart) or because the inspection is perfunctory; this is especially so in private slaughter-houses. Bovine infections are most frequently acquired in mid-summer, but it is difficult to identify the human source. Economically, the problem does not justify the offer of cash premiums (as in Württemberg) for complete strobilae, and control must rest principally with the meat inspector. B.G.P.

359—Medical Parasitology and Parasitic Diseases.

a. KALUS, V.—" Sur la trichinellose." III (1), 93-101. [In Russian.] [1934.]
b. VASSILKOVA, Z.—" Sur le rôle des champs d'épandage dans l'épidémiologie des helminthoses." III (2), 149-163. [In Russian.] [1934.]
c. KOROVITSKI, L. & ARTEMENKO, V.—" Sur l'importance des champs d'épandage pour l'épidémiologie des helminthoses." III (2), 163-178. [In Russian.] [1934.]
d. PODYAPOLSKAYA, V. & GNEDINA, M.—" Sur le rôle des mouches dans l'épidémiologie des helminthoses." III (2), 179-185. [In Russian: French summary p. 185.] [1934.]
e. LOSSEV, L.—" Sur la dehelminthisation du milieu ambiant dans l'ascaridose." III (2,) 185-191. [In Russian.] [1934.]
f. KOULAGUINE, S. & LONGUINOV, A.—" Sur l'emploi de l'helmintho-ovoscopic quantitative." III (2), 191-193. [In Russian.] [1934.]
g. SCHULZ, R. E.—" L'état actuel de l'helminthologie expérimentale." III (3), 201-211. [In Russian: French summary p. 211.] [1934.]
h. ISSAJEV, L.—" Ueber die Eindringung der *Dracunculus medinensis*-Larven in den Cyclops." III (3), 212-230. [In Russian: German summary p. 230.] [1934.]
i. ISSAJEV, L.—" Experimentelle Dracunculosis beim Hunde." III (3), 231-237. [In Russian: German summary pp. 237-238.] [1934.]
j. ISSAJEV, L.—" Einfache Methode zum Nachweis der Nematoden-Larven in den Crustacea." III (3), 238-239. [In Russian: German summary p. 240.] [1934.]
k. SKVORTSOV, A.—" Recherches [sur] la morphologie et la biologie de l'œuf et sur le cycle évolutif du *Dicrocoelium lanceatum*." III (3), 240-253. [In Russian: French summary p. 253.] [1934.]
l. KOROPOV, V. & ROBERMAN, S.—" Étude experimentale sur l'influence de l'helminthose sur la sécretion gastrique." III (3), 254-257. [In Russian: French summary p. 257.] [1934.]
m. PODYAPOLSKAIA, V. & VASSILKOVA, Z.—" Le traitement de l'hyménolépidose par des doses fractionées de l'extrait éthéré de fougère mâle." III (3), 257-267. [In Russian: French summary p. 267.] [1934.]
n. SCHULMAN, E.—" La trichocephalose, l'hyménolépidose et l'ascaridose dans le bassin houillier du Donez." III (5), 415-428. [In Russian.]

(a) Kalus has reviewed the epidemiology of trichinosis, from his own experience and from the literature. He lays upon the Public Health authority all the onus of preventing and combating the disease. An appended editorial note points out, however, that prophylactic measures are being taken on an increasing scale by the collective farms and in pig-breeding schemes, where pigs are raised hygienically. The re-organization of the meat industry is also assisting in keeping the infection under control. B.G.P.

(b) Vassilkova reports the ova of 7 species of helminths in sewage used for irrigating the Lyberets sewage farm. Vegetables such as lettuce, radish, cucumber and tomato were similarly contaminated. She recommends that trenching, which is carried out in the cultivation of these vegetables, should be deeper and that sewage should fill not more than three-fourths of the trench. She also suggests prophylactic measures for the workers employed at the farm. B.G.P.

(c) The experience of Korovitski and Artemenko at the Odessa sewage farm indicates that sewage-irrigation of vegetables does not play an important rôle in the spread of helminths. Here, the sandy nature of the soil and the high degree of insolation combine to kill most of the ascaris and trichuris eggs.
An editorial note (p. 178) to this and the preceding paper emphasizes the importance of climatic and soil conditions, and pleads for further work under such differing conditions. B.G.P.

(d) Podyapolskaya and Gnedina find that flies can play an important part in the dissemination of helminth ova, not only by external contamination but also, where the mouth parts are not too small, by their dejecta (faeces and vomit). Thus, *Calliphora erythrocephala* will, and *Musca domestica* apparently will not, carry internally such eggs as those of ascaris, trichuris, and *Diphyllobothrium latum*. B.G.P.

(e) Lossev points out that the eggs of *Parascaris equorum* and *Toxocara canis* are very resistant to high temperatures and to chemical reagents, especially when in the infective stage. He has found that stables and kennels can be effectively sterilized by the use of water at 80° C. The only useful chemicals are phenol in 4 per cent. solution, and unslaked lime applied at first dry. B.G.P.

(f) Koulaguine and Longuinov describe a modification of the Stoll egg-counting technique which they have used in their work on ascaris in school children. They use 4 cc. of N/10 NaOH in a test-tube and add faeces to the 5 cc. mark. After mixing, 0·5 cc. is withdrawn by pipette and examined under a series of coverglasses and in glycerine. The multiplying factor is 10. The number of eggs per cubic centimetre of faeces per female ascaris was found to vary from 910 to 17,500. B.G.P.

(g) Schulz briefly reviews the present status of experimental helminthology, especially in Russia where co-ordinated research in a chain of research stations is dealing, on the medical side, particularly with (i) free-living stages of parasitic helminths, (ii) host-parasite relationships, and (iii) means of attacking helminths inside or outside the hosts. B.G.P.

(h) Issajev has investigated the infection of *Cyclops* spp. by *Dracunculus medinensis* larvae in the Samarkand district. The larva is always passively swallowed by the cyclops. *Diaptomus* swallows larvae but they fail to penetrate into the body cavity and are excreted. Cladocera are unable to swallow them. The experimental work, which is fully illustrated, was done with *Cyclops oithonoides*. B.G.P.

(i) Issajev has successfully infected 27 out of 42 dogs, 4 to 6 months old, with *Dracunculus medinensis*. Each dog was given 25 to 30 infective larvae in 100 cc. water, after 24 hours starvation. Larvae remain infective for 3 weeks; after infection maturity is reached in 9 to 10 months. B.G.P.

(j) For detecting natural infections of *Dracunculus medinensis* in large numbers of cyclops, Issajev allows the latter to macerate at 30° to 36°C. for 1 or 2 days. The process is accelerated by HCl in 0·1 to 0·2 per cent. solution. B.G.P.

(k) Skvortsov has found that *Helicella candidula* is the intermediary for *Dicrocoelium lanceatum* in the Moscow district. The eggs hatch only in the mollusc's intestine whence the miracidium migrates to the connective tissue between the liver follicles. The eggs withstand temperatures between 50°C. and —23°C. for at least 24 hours. In the shell itself the author distinguishes 4 concentric membranes. B.G.P.

(l) Koropov and Roberman have investigated the effects of parasitism on the gastric secretion of a dog in which the stomach was isolated according to the Heidenhain-Pavlov technique. After worming the gastric juice is increased both in quantity and in acidity ; it is diminished for several days after the ingestion of hydatid fluid. B.G.P.

(m) Podyapolskaia and Vassilkova have had considerable success in treating *Hymenolepis nana* with repeated doses of male fern extract. Repetition of the dose is essential since, at the time of the first treatment, some of the worms will probably be in the inaccessible cysticercoid stage within the intestinal villi. B.G.P.

(n) Schulman gives epidemiological data for infections with trichuris, hymenolepis and ascaris among various population-groups (pre-school children, school children, miners and other adults) in the mining settlements of the Don valley. B.G.P.

360—Medicine.

a. RHOADS, C. P., CASTLE, W. B., PAYNE, G. C. & LAWSON, H. A.— " Observations on the etiology and treatment of anaemia associated with hookworm infection in Puerto Rico." XIII (3), 317-375. [1934.]

(a) This is a very comprehensive account of the etiology and treatment of hookworm anaemia. The possible toxic effects of the hookworms, the effect upon blood production of their removal, of haematopoietic substances without removal and the effect of blood loss are discussed in detail.

The relation of factors other than the hookworm to the anaemia particularly the relation of dietary defects and of gastrointestinal pathology to the anaemia is then dealt with. In relation to treatment of hookworm anaemia the effect of removing the worms, of iron salts, of various liver extracts and of improved diet are considered. The conclusion reached by the authors, based on a study of 83 patients in Porto Rico, is that the anaemia is mainly due to insufficient blood production as a result of a deficiency of available iron and other haematopoietic substances in the body and produced by multiple factors, e.g. defective diets or gastro-intestinal changes or blood loss due to the worms. The removal of the worms produced only slight clinical improvement. Improvement of the diet had similarly slight effect : whereas the administration of ferric ammonium citrate with or without the removal of the parasites was followed by striking improvement of the blood values and of the clinical condition. The medical and economic advantages of using large doses of iron in the prevention and treatment of hookworm anaemia are emphasised. R.T.L.

361—Medizinische Klinik.

a. VELTEN, R. D.—" Die Finnen des Menschen." XXX (41), 1356-1357. [1934.]

(a) Velten gives a brief account of the cystic tapeworms of man, *Cysticercus cellulosae* and hydatid. B.G.P.

362—Medizinische Welt.

a. KUCK, W.—" Die angebliche Schädlichkeit der Kombination des Extract. filic. mar. mit Ol. Ricini bei Bandwurmkuren." VIII (19), p. 661. [1934.]
b. RODENWALDT, E.—" Filaria malayi und ihre Ueberträger." VIII (39), 1369-1371. [1934.]

(a) A mixture of *Filix mas* extract and castor oil is well tolerated and exceedingly effective against *Taenia saginata* and *T. solium*. The addition of malt extract 3 parts to 4 of castor oil renders the mixture more palatable. The dosage recommended for men is 6 g. Extr. filicis + 28 g. of castor oil and malt (4 : 3) ; for women 6 g. Extr. filicis + 21 castor oil and malt, and 4 g. Extr. filicis + 14 castor oil and malt mixture for children. R.T.L.

(b) In the Delta of the Serajoe there is a large endemic focus of *Filaria malayi* associated with Acro-elephantiasis. Over 50 per cent. of the population show microfilaria malayi in the blood. The old branches of the Serajoe, which are now stagnant swamps throughout the greater part of the year, afford the necessary biological conditions for the abundant development of the three species of *Mansonia* which serve as the transmitting agents. There is a definite correlation between the breeding of certain vectors and the plant *Pistia stratiotes*. R.T.L.

363—Mémoires de l'Académie Royale des Sciences et des Lettres de Danemark. Section des Sciences.

a. WESENBERG-LUND, C.—" Contributions to the development of the Trematoda Digenea. Part II. The biology of the freshwater Cercariae in Danish fresh-waters." 9th Series, V (3), 1-223. [1934.]

(a) In this finely illustrated monograph on the Danish fresh-water Cercariae, Wesenberg-Lund describes the following 12 new species : *Cercaria grandis*, *C. obscura*, *C. abyssicola*, *C. affinis*, *C. laticauda*, *C. gracilis*, *C. cordiformis*, *C. longiremis*, *C. frederiksborgensis*, *C. linearis*, *Cercariaeum gibba* and *C. crassa*. In all, 61 species are dealt with. B.G.P.

364—Memorias do Instituto Oswaldo Cruz.

a. TRAVASSOS, L.—" Synopse dos Paramphistomoidea." XXIX (1), 19-178. [1934.]
b. LUTZ, A.—" Outro grupo de trematodes nascendo de Dicranocercarias e outro caso de especie com coecos abrindo para fóra." XXIX (2), 229-238. [Also in German, pp. 239-248.] [1934.]
c. CRUZ, W. O.—" Pathogenia da anemia na Ancylostomose. II. Causas determinantes dos phenomenos regenerativos e degenerativos nessa anemia e contribuiçoes para elucidar o seu mechanismo intimo." XXIX (2), 263-426. [Also in English, pp. 427-485.] [1934.]
d. CRUZ, W. O.—" Pathogenia da anemia na Ancylostomose. III. Modificaçoes hematicas e organicas, provocadas pelas simples eliminaçao do Ancylostomo e do Necator, em individuos fortemente anemiados." XXIX (2), 487-540. [Also in English, pp. 541-561.] [1934.]

(a) After setting out in tabular form the classifications proposed by Fischoeder, Stiles, Goldberger, Travassos, Maplestone, Stunkard, Poche, Fuhrmann and Fukui, the author gives a new scheme for the Paramphistomoidea. This is followed by succinct systematic descriptions of the 6 families, 9 sub-families and 55 genera included in this super-family. R.T.L.

(b) Furcocercariae are better named Dicranocercariae the adults of which, so far as has been ascertained, belong to Schistosomidae, Strigeidae and Clinostomidae (n. fam.). The developmental stages of a Brazilian Clinostomum which occurs naturally in fish in Rio are described in detail and confirm in many points the recent work of Sewell Hopkins on *Clinostomum marginatum*. The presence of rediae is regarded as sufficient grounds for the creation of a new family Clinostomidae. R.T.L.

(c) Hookworm anaemia is hypochromic, microcytic and slightly regenerative. The haematic indices do not drop below minimal figures which have been determined. Iron is the only substance which is really active in inducing regeneration in hookworm anaemia, acting by eliminating degenerated red cells from the circulation and by causing young normal red cells to appear. The symptoms disappear with the disappearance of the anaemia. In Cruz's view the results show that intestinal haemorrhages are not the only or even the main factor in causing the anaemia. The factors are long lasting nutritional deficiency with the greater elimination of iron through the haemorrhage and the exaggerated mucus secretion. R.T.L.

(d) After anthelmintic treatment there is often remarkable improvement in the blood although the symptoms remain only slightly altered. There is a complete absence of blood regeneration. The elimination of the hookworms has nothing to do with these changes which depend on the assimilation of the anthelmintic and its specific action on the liver cells. The view that iron deficiency is of essential importance in the anaemic syndrome is confirmed. R.T.L.

365—Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey".

a. VIGUERAS, I. PÉREZ.—"*Ornithostrongylus crami* n. sp. (Nematoda) parasito de *Zenaidura macroura macroura*." VIII (1), 53-54. [1934.]
b. VIGUERAS, I. PÉREZ.—"Notas sobre las especies de Filaroidea encontradas en Cuba." VIII (1), 55-60. [1934.]
c. VIGUERAS, I. PÉREZ.—"*Ophiotaenia barbouri* n. sp. (Cestoda) parásito de *Tretanorhynus variabilis* (Reptilia)." VIII (4), 231-234. [1934.]
d. VIGUERAS, I. PÉREZ.—"Sobre la presencia en Cuba de *Diphyllobothrium mansoni* (Cobbd.)." VIII (6), 351-352. [1934.]
e. VIGUERAS, I. PÉREZ.—Nota sobre Gordidos de Cuba." VIII (6), 353-354. [1934.]

(a) Vigueras describes *Ornithostrongylus crami* n. sp. from the duodenum of a dove, *Zenaidura macroura macroura*. The spicules of the male are equal and trifurcate for one third of their length; the accessory piece is typical of the genus. The female tail is terminated by a sharp spine 26 μ long. P.A.C.

(b) Vigueras lists 8 adult species and one larval form of Filarioidea met with in Cuba. Two of the species are new, viz., *Diplotriaena bermudezi* n. sp. from the peritoneal cavity of *Saurothera merlini* d'Orb and *Finlaynema guiterasi* gen. et sp. nov. from *Artibeus jamaicensis parvipes*. *Finlaynema* belongs to the Filariinae. It has a finely striated cuticle, a cylindrical mouth capsule, the oesophagus is divided in two parts, the vulva opens at the level of the junction of oesophagus and intestine, the spicules are unequal—the longer with a lash-like terminal part, the shorter ending in a small knob. R.T.L.

(c) Vigueras gives a morphological description, with measurements and illustrations, of *Ophiotaenia barbouri* n. sp. The cestode was recovered from the intestine of the snake, *Tretanorhynus variabilis*, in Habana, Cuba. J.N.O.

(d) Vigueras records the occurrence of *Diphyllobothrium mansoni* in a cat from Habana, Cuba. A very brief review of the geographical distribution and medical importance of the parasite is made. J.N.O.

(e) Vigueras records the presence of *Paragordius varius* (Leidy) in Cuba for the first time. From a review of the relevant literature the author gives a list of the Gordiids which have been reported from Cuba. They are: *Gordius capitosulcatus*, *Chordodes cubanensis*, *Paragordius violaceus* and the species mentioned above. J.N.O.

366—Münchener Tierärztliche Wochenschrift.

a. STETTER, R.—"Nematoden bei der Schildkröte." LXXXV (35), 413-416. [1934.]
b. STROH, G.—"Beitrag zum Vorkommen der Filaria flexuosa-Knoten im Unterhautzellgewebe des Rotwildes." LXXXV (38), 449-450. [1934.]

(a) Clinical examination and treatment of a Grecian tortoise (*Testudo graeca*) which showed apathy, constipation, gastro-enteritis and icterus, demonstrated that these symptoms were due to infection with *Ascaris holoptera* Rud. [=*Angusticaecum holopterum*]. The tortoise was bathed in warm water and Karlsbad Salt several times a day until the bowels acted freely. Castor oil was tried but had no effect as it was vomited. In all 13 worms, of varying ages, were passed in the stools which were soft and slimy and full of gas. The writer believes that these worms had been in the tortoise for over three years, that infection is direct and that subsequent auto-infection had occurred thus explaining the discrepancy in age of the worms. S.G.S.

(b) The not infrequent occurrence of nodules due to *Filaria flexuosa* Wedl in red deer from the Bavarian and Austrian Highlands is described by Stroh. The nodules occurred in the abdominal wall and in the subcutaneous fascia over the shoulder. Some of the nodules, which varied in size from that of a hazel nut to that of a plum, contained both sexes of worm: others, females alone. Similar nodules have been previously recorded from deer in East Prussia, Silesia, N. Hanover, the Harz and Spessart. The disease occurs in both stags and hinds. S.G.S.

367—Nachrichten über Schädlingsbekämpfung.

a. KOTTE, W.—" Die Federbuschsporen-Krankheit des Getreides." IX (4), 170-174. [1934.]

(a) In his paper on *Dilophospora alopecuri* disease in wheat, Kotte points out that this fungus was supposed to gain entrance to the host-plant only through the lesions due to *Tylenchus tritici*. This is now known not to be the case. The two tend to follow the same distribution but the fungus often occurs in the absence of the eelworm. B.G.P.

368—Natuurwetenschappelijk Tijdschrift.

a. DE WAELE, A.—" Nieuwe bevindingen over der levenscyclus der Cestoden." XVI (2/5), 60-69. [1934.]
b. SCHUURMANS STEKHOVEN, JR., J. H.—" De verzoeting der Zuiderzee en de vrijlevende Nematoden." XVI (2/5), 111-116. [1934.]

(a) De Waele finds that cestodes resist the host's digestive fluids not by the formation of antiferments but simply because of the resistant cuticle, a resistance that is overcome by successive immersion in acid and alkaline solutions.

In this way the egg shells and cyst-walls are digested when swallowed by intermediate and definitive hosts respectively, whilst the contained embryo and scolex are effectively protected during passage through the acid stomach juices. Evagination of the (cystic) scolex is due first to digestion of the cyst wall and secondly to the action of bile substances in stimulating peristalsis in the neck region. The selective mechanism of specificity resides partly in the blood of the intermediary as regards the embryo : as regards the young adult in the definitive host specificity is not yet understood, but the explanation should be sought among those cestodes which tend to suppress the intermediary, i.e., *Hymenolepis nana* or *Taenia solium*. A technique for investigating life-histories is to be found in testing the action of digestive juices of suspected intermediaries upon the eggs of the cestode in question. Swallowing the scolex of an adult worm, or a thoroughly masticated cysticercus will involve the digestion of these. If an intermediary swallows an intact living proglottis the contained egg-shells will be protected from digestion and the embryos will be unable to escape. B.G.P.

(b) Schuurmans Stekhoven gives an account of the effect of the freshening of the Zuider Zee on free-living nematodes.

Mud or soil samples were taken at certain defined spots of the former Zuider Zee during the period 1928 to 1933 and the free-living nematodes in them were collected, their numbers counted and their identity determined ; the number of nematodes per cubic centimetre of mud is called the nematode index. This information is correlated particularly with the salt content of the water expressed in milligrammes of chlorine per litre. It is shown that with the decrease in salinity, species which prefer a lower salt content come into prominence and supersede previously predominant species, and that the Zuider Zee is less habitable than formerly to brackish-water and marine nematodes. T.G.

369—Nederlandsch-Indische Bladen voor Diergeneeskunde en Dierenteelt.

a. MEIJER, W. C. P. & SAHAR.—" Over een lintworm van den hond, *Diphyllobothrium raillieti* Rátz en het bijbehoorende plerocercoid *Sparganum raillieti* Rátz van het varken." XLVI (1), 1-12. [1934.]
b. BUBBERMAN, C. & KRANEVELD, F. C.—" Over een dermatitis squamosa et crustosa circumscripta bij het rund in Nederlandsch-Indië, genaamd cascado. III. Het voorkomen van cascado bij de geit." XLVI (2), 67-73. [1934.]
c. BUBBERMAN, C. & KRANEVELD, F. C.—" Stephanofilariosis. IV. Over het voorkomen bij het rund op Java." XLVI (2), 111-112. [1934.]
d. BUBBERMAN, C. & KRANEVELD, F. C.—" Stephanofilariosis. V. Twee zware gevallen bij het rund." XLVI (3), 149-151. [1934.]
e. MEIJER, W. C. P.—" *Taenia hydatigena* van den hond en *Cysticercus tenuicollis* van het varken." XLVI (5), 279-284. [1934.]

(a) Meijer and Sahar record *Diphyllobothrium raillieti* in the Dutch East Indies where the plerocercoids are commonly found in pigs under the peritoneum, and the adults naturally in dogs and experimentally in cats. They agree with Kotlán that man is not a definitive host. B.G.P.

(b) Bubberman and Kraneveld have now found that " Cascado," or Stephanofilariasis, occurs in the goat in Celebes, the lesions in this host being similar to those in cattle. Brief notes on 5 cases are given. B.G.P.

(c) Continuing their series of papers on " Cascado " under a new general title, Bubberman and Kraneveld here state that the disease occurs in cattle not only in north Celebes and south Sumatra but also in Java. B.G.P.

(d) Description, with excellent photographs, of two very severe cases of stephanofilariosis in cattle from Northern Celebes, showing lesions which measure up to 23 by 30 cm. H.M.

(e) Meijer frequently finds *Cysticercus tenuicollis* in pigs in the Dutch East Indies. He has confirmed his diagnosis by feeding the cysts to dogs; cats, however, were refractory. *Taenia hydatigena* in the dog is common as a natural infection also. B.G.P.

370—Nordiska Veterinärmötet Helsingfors 4., 1933.

a. BRANDT, A. J.—" Pelsdyrsykdommer i Norge." pp. 947-980. [English summary.] [1934.]
b. SJÖBERG-KLAAVU, A.—" Om nematoder i matsmältningsorganen hos får i Finland." pp. 981-996. [German summary.] [1934.]

(a) From an examination of 6,512 faecal samples and from 2,159 autopsies, mainly of silver and blue arctic foxes but also of some mink and other fur-bearing animals, Brandt is able to report on the principal diseases of these animals in Norway. Animal parasites are the chief causes of disease. Hookworms, lungworms and ascarids were formerly the most numerous helminths, but these have decreased rapidly since 1930, with the introduction of hygienic measures. Trematodes, on the contrary, show an extraordinary increase from 1929 (2 per cent. incidence) to 1932 (57 per cent.), due mainly to the increased use of fish as food. The trematodes appear to be harmless as a rule, except in mink. Other diseases are also dealt with. B.G.P.

(b) Sjöberg-Klaavu states that gastro-intestinal nematodes are common in sheep and cattle in southern Österbotten (Finland). The usual species are mentioned and an account is given of attempts to control them with the following anthelmintics: a copper lick, " Lentin-Merck," " Univerm " (carbon tetrachloride), and " Nema " (tetrachlorethylene), of which the last gave the best results. B.G.P.

371—Norsk Veterinaer-Tidsskrift.

a. KRISTENSEN, M. H.—" Nyere undersøkelser over bendelorm hos høns." XLVI (3), 118-125. [1934.]
b. KRISTENSEN, M. H.—" Noen bemerkninger om *Syngamus trachea*." XLVI (4), 193-196. [1934.]
c. WIESE, E.—" Distomatose hos storfe i Vestfold." XLVI (10), 489-502. [1934.]

(a) Kristensen briefly summarizes some of the recent work on the life-histories of poultry cestodes, and the appropriate control measures based thereon. He is concerned almost exclusively with *Davainea proglottina* and *Raillietina cesticillus*. B.G.P.

(b) Kristensen criticises a recent paper dealing partly with syngamiasis by Grini, who apparently is not up-to-date with the recent work on the subject. He then goes on to survey the present position mentioning the natural immunity that develops in the chicken and the possibility of breaking it down by dietary measures, the transmission of gapes by earthworms and the importance of turkeys and wild birds in the spread of the parasite. He mentions that undiluted " Lugol " solution is recommended locally in the treatment of the disease. P.A.C.

(c) Wiese gives an account of the epidemiology of fascioliasis in cattle, due to *Fasciola hepatica* and *Dicrocoelium dendriticum*, in Vestfold (west of the Oslofjord in Norway) from 1926 to 1933. The disease, which has steadily increased since 1927, is correlated with wet summers, low-lying pastures, and ill-fed milch cattle. The author gives information on the pathology, clinical picture, diagnosis, treatment and prevention of the disease. He recommends treatment of pastures with chalk or iron sulphate, and of infected animals with " Distol." The loss to the province of Vestfold is over £6,000 per annum. *F. hepatica* is said to occur often in man [in Norway?], but human infection is regarded as a secondary danger. S.G.S.

372—Okayama-Igakkai-Zasshi.

a. UYENO, H.—" Über den urikolytischen Vorgang in der Kaninchenniere bei experimenteller Clonorchiasis sinensis." XLVI (6), 1225-1230. [In Japanese: German summary p. 1224.] [1934.]

(a) Uyeno has carried out experiments which suggest that the kidneys of rabbits suffering from clonorchiasis do not carry out the normal process of uricolysis (conversion of uric acid to allantoin). He confirmed that kidneys taken from normal rabbits are able, *in vitro*, to convert added uric acid to allantoin. In similar experiments with diseased kidneys, however, the process was strongly inhibited. R.H.H.

373—Onderstepoort Journal of Veterinary Science and Animal ~~Husbandry~~ Industry.

a. ORTLEPP, R. J.—"Preliminary note on the life-history of *Gaigeria pachyscelis* (Raill. and Henry, 1910), a hookworm of sheep." III (2), 347-349. [1934.]
b. ORTLEPP, R. J.—"On *Habronema murrayi* sp. n. from the barn owl *Tyto alba*." III (2), 351-355. [1934.]

(a) Ortlepp has found that the infective larvae of *Gaigeria pachyscelis* penetrate the skin and positive results were obtained in sheep by applying the larvae between the hoofs or behind the ears. Oral infections gave negative results. Observations on the development of the parasite showed that the larvae remain in the lungs until the 13th or 14th day and after passing to the intestine, the adult stage is reached in about 10 weeks after infection. D.O.M.

(b) Ortlepp describes a new nematode, *Habronema murrayi*, found in the gizzard of *Tyto alba* and *Tyto capensis*. The new species is closely related to *H. ficheuri* Seurat, 1916, but differs from the latter in the arrangement of the preanal papillae and in the character of its spicules. D.O.M.

374—Orvosi Hetilap.

a. NEUBER, E.—"Aranykészítmények gyógyhatásáról, hatásmechanismsáról, különös tekintettel néhány idült fertözö megbetegedésre (skleroma, aktinomykosis, filariasis)." LXXVIII (51), 1175-1179. [1934.]
b. LÖRINCZ, F.—"Féregfertözések gyógykezelése." LXXVIII (52), 1191-1196. [1934.]

(a) The Hungarian original of which a German translation appeared in *Wien. Klin. Wschr.* [see Helm. Abs., Vol. IV, No. 71a]. R.T.L.

(b) A general review of recent work on the therapy of parasitic infections. R.T.L.

375—Philippine Journal of Science.

a. TUBANGUI, M. A.—"Nematodes in the collection of the Philippine Bureau of Science, II: Filarioidea." LV (2), 115-122. [1934.]
b. JESUS, Z. DE—"Haemorrhagic filariasis in cattle caused by a new species of *Parafilaria*." LV (2), 125-130. [1934.]

(a) Six species of Filarioidea have hitherto been reported from the Philippines. Tubangui adds 6 new species, viz., *Parafilaria bovicola* n. sp. from skin nodules in native cattle, *Diplotriaena pycnonoti* n. sp. from *Pycnonotus goiavier*, *Serratospiculum thoracis* n. sp. from *Falco ernesti*, *Hamatospiculum otomelarium* n. sp. from *Otomela lucionensis*, *H. leticiae* n. sp. from *Halcyon chloris*, and *H. dicruri* n. sp. from *Dicrurus balicassius*. R.T.L.

(b) Raised nodules on the neck and body of cattle which after some weeks bled profusely have been found to contain female worms described by Tubangui [see previous abstract] as *Parafilaria bovicola*. They were generally seen between December and the following July. All the nodules disappeared completely by September. R.T.L.

376—Phytopathology.

a. MACKIE, W. W.—" Breeding for resistance in Blackeye cowpeas to fusarium rot, charcoal rot, and nematode root knot." [Abstract of a paper presented at the 18th Annual Meeting of the Pacific Division of the American Phytopathological Society.] XXIV (10), p. 1135. [1934.]

b. SMITH, R. E., HANSEN, H. N. & SCOTT, C. E.—" A bud blight of gooseberry apparently caused by nematodes." [Abstract of a paper presented at the 18th Annual Meeting of the Pacific Division of the American Phytopathological Society.] XXIV (10), p. 1138. [1934.]

c. GODFREY, G. H. & SCOTT, C. E.—" New economic hosts of the stem and bulb nematode." [Abstract of a paper presented at the 18th Annual Meeting of the Pacific Division of the American Phytopathological Society.] XXIV (10), p. 1147. [1934.]

(a) Mackie describes the methods used in breeding Blackeye Cowpeas resistant to Fusarium wilt, Charcoal Rot and *Heterodera marioni*. The varieties Iron, Victor and Brabham showed resistance and were used as breeding stocks. A cross between Iron and Blackeye gave the best results, resistance to all three diseases being dominant in the F^1 generation. In the F^2 generation correlation appeared to exist between dark coloured leaves and disease resistance. Quality of the root cortex determines resistance and it is suggested that resistance is associated with the presence of suberin. M.J.T.

(b) Smith, Hanson and Scott describe a diseased condition of gooseberry bushes in California, associated with a nematode, probably *Aphelenchoides ribes*. The disease is characterized by non-development or deformity of buds, spurs and leaves accompanied by general stunting of the plant and reduction in yield. Nematodes occur in great numbers in the buds and in some cases may be embedded in the leaf tissue. M.J.T.

(c) Godfrey and Scott record three new hosts of *Anguillulina dipsaci*, viz., salsify, *Tragopogon porrifolius*; parsley, *Petroselinum hortense*; and celery, *Apium graveolens*. Infections on salsify and parsley occurred in the field where these crops followed a heavily infested crop of *Allium sativum*. Swollen leaf-bases and " tulip-root " effect in young shoots occurred in both hosts and a very heavy infestation within the roots of a fleshy-rooted variety of parsley—a new type of injury for this parasite, also occurred. Celery became infected as a result of greenhouse inoculation with nematodes from garlic and parsley. M.J.T.

377—Prager Tierärztliches Archiv.

a. LINDAUER, R.—" Die Trichinose in Asch." XIV (7), 149-156. [1934.]

(a) Lindauer gives an account of the trichinosis epidemic in Asch in April 1934 [see Helm. Abs., Vol. III, No. 246a], in which 112 persons were affected. He is mainly concerned with the clinical symptoms, which led to a diagnosis of influenza. Examination of the blood, however, showed an eosinophilia ranging from 20 to 50 per cent. Compulsory trichinella-inspection was introduced in Asch—after the epidemic had occurred. B.G.P.

378—Proceedings of the Academy of Sciences (United Provinces of Agra and Ouhd, India). (Continuation of No. 314.)

a. HARSHEY, K. R.—" On Amphistome parasites of sheep and goat from Allahabad." IV (1), 95-106. [1934.]
b. PANDE, B. P.—" On a new trematode from an Indian fresh-water fish." IV (1), 107-112. [1934.]
c. SRIVASTAVA, H. D.—" On new trematodes of frogs and fishes of the United Provinces, India. Part IV. The occurrence and seasonal incidence of infection of certain trematodes in the above hosts." IV (1), 113-119. [1934.]

(a) The amphistomes found by Harshey in indigenous sheep and goats in Allahabad are *Gastrothylax elongatus*, *G. crumenifer*, *Cotylophoron ovatum* n. sp., *C. orientalis* n. sp., and *C. elongatum* n. sp. The 3 new species are described and figured, and keys are given for the species of both genera. B.G.P.

(b) Pande describes and figures *Orientocreadium indicum* n. sp., firmly attached to the intestinal wall of the fresh-water fish *Rita buchanani* from the river Gomti (U.P.). This is the second species of this genus, which the author thinks should go into the Plesiocreadiinae rather than into the Allocreadiinae where Tubangui originally placed it. B.G.P.

(c) Many of the trematodes found by Srivastava in frogs and fishes in the United Provinces show a marked seasonal incidence reaching a maximum between July and September (rainy season) and a minimum in December.

Diplodiscus amphichrus, described by Tubangui from the Philippines, is represented in India by what Srivastava regards as a new variety, *D. amphichrus* var. *magnum*, which is described and figured. B.G.P.

379—Proceedings of the Helminthological Society of Washington.

a. WARD, H. B. & FILLINGHAM, J.—" A new trematode in a toadfish from South-eastern Alaska." I (2), 25-31. [1934.]
b. PRICE, E. W.—" A new term for the adhesive organs of trematodes." I (2), p. 34. [1934.]
c. CHITWOOD, B. G. & McINTOSH, A.—" A new variety of *Alloionema* (Nematoda : Diplogasteridae), with a note on the genus." I (2), 37-38. [1934.]
d. CHITWOOD, B. G. & LUCKER, J. T.—" *Dicellis nira*, new species (Nematoda : Drilonematidae)." I (2), p. 39. [1934.]
e. SPINDLER, L. A.—" Effect of copper sulphate on infective larvae of the nematode *Stephanurus dentatus* (Stephanuridae) and *Oesophagostomum* spp. (Strongylidae)." I (2), p. 42. [1934.]
f. DIKMANS, G.—" Observations on stephanofilariasis in cattle." I (2), 42-43. [1934.]
g. CHRISTIE, J. R.—" The nematode genera *Hystrignathus* Leidy, *Lepidonema* Cobb and *Artigasia* n. g. (Thelostomatidae)." I (2), 43-48. [1934.]
h. CRAM, E. B.—" Recent records of the gizzard worm, *Acuaria anthuris* (Rudolphi, 1819) (Nematoda : Acuariidae), with observations on its life history." I (2), 48-49. [1934.]
i. CRAM, E. B.—" Orthopterans and pigeons as secondary and primary hosts, respectively for the crow stomach-worm, *Microtetrameres helix* (Nematoda : Spiruridae)." I (2), p. 50. [1934.]

j. ANDREWS, J. S.—" Egg production by *Nematodirus* spp. (Trichostrongylidae) and by *Chabertia ovina* (Strongylidae) following repeated experimental infections of sheep with these nematodes." 1 (2), p. 51. [1934.]

k. HASTINGS, R. J. & NEWTON, W.—" The influence of a number of factors upon the activation of dormant or quiescent bulb nematodes, *Anguillulina dipsaci* (Kühn, 1858) Gerv. and v. Ben., 1859 (Anguillulinidae)." 1 (2), 52-54. [1934.]

l. JONES, M. F.—" Cysticercoids of the crow cestode, *Hymenolepis variabilis* (Mayhew, 1925) Fuhrmann, 1932 (Hymenolepididae)." 1 (2), 62-63. [1934.]

m. CUVILLIER, E.—" New bird hosts for the acanthocephalid *Plagiorhynchus formosus* (Echinorhynchidae)." 1 (2), p. 63. [1934.]

n. DIKMANS, G.—" New records of helminth parasites." 1 (2), 63-64. [1934.]

(a) Ward and Fillingham describe and figure *Opechona alaskensis* n. sp. from a toadfish in Alaska. The 3 species of *Pharyngora* should be transferred to *Opechona* Looss. B.G.P.

(b) Price suggests the name " haptor " for the adhesive organs of Monogenea, whatever morphological variation they may show. B.G.P.

(c) Chitwood and McIntosh describe and figure *Alloionema appendiculatum* var. *dubia* n. var. The genus resembles *Strongyloides* in showing alternation of generations, but differs morphologically. It is placed in a new subfamily, Alloionematinae, in the Diplogasteridae, while Strongyloididae n. fam. is erected for *Strongyloides*. B.G.P.

(d) No representative of the family Drilonematidae has hitherto been found parasitic in earth worms in North America. *Dicelis nira* n. sp. from *Helodrilus caliginosus* is described by Chitwood and Lucker and differentiated from *D. pleurochaetae* and *D. filaria*. R.T.L.

(e) Spindler found that 1 per cent. $CuSO_4$ solution sprayed on infected soil at 15 c.cm. per square foot had no effect on *Stephanurus* or *Oesophagostomum* larvae. B.G.P.

(f) Lesions due to *Stephanofilaria stilesi* have been found fairly commonly in cattle in the central U.S.A. by Dikmans. B.G.P.

(g) Christie proposes *Artigasia* n. g. for the monodelphic species of *Hystrignathus* and *Lepidonema*, gives generic diagnoses for all 3 genera, and redescribes the species of the last two. B.G.P.

(h) Cram regards *Acuaria nebraskensis* Williams, as a synonym of *A. anthuris*. She finds that this worm develops in grasshoppers and crickets and she describes the 3rd stage larva. B.G.P.

(i) *Microtetrameres helix* from crows were found by Cram to develop in grasshoppers and a cockroach; the 3rd stage larvae were infective to pigeons. B.G.P.

(j) Andrews fed infective larvae of *Nematodirus* to a lamb at various intervals up to 100 days. Eggs in the faeces first appeared on the 20th day, were most numerous on the 54th day, and finally disappeared on the 265th day. In a similar experiment with *Chabertia ovina* larvae fed to another lamb, the eggs appeared on the 52nd day, were most numerous on the 79th day, and finally disappeared 102nd day (in spite of a dose of about 1,000 larvae on the 96th day). B.G.P.

(k) From a series of experiments with dormant, pre-adult *Anguillulina dipsaci*, Hastings and Newton find that shallow dishes containing shallow

depths of tap-water under an atmosphere of air (as opposed to CO_2) give maximum motility in the worms. Infusions of rotten bulbs also checked the onset of motility. B.G.P.

(l) Jones found that eggs of *Hymenolepis variabilis* developed to the cysticercoid stage (which is described) in about 14 days in certain Coleoptera and grasshoppers, the best carrier being *Aphodius granarius*. B.G.P.

(m) Cuvillier reports *Plagiorhynchus formosus* from a cat-bird, *Dumetella carolinensis*, and a thrush, *Hylocichla* sp., at Washington, D.C. The parasite may prove to be of economic importance in domestic birds. B.G.P.

(n) Dikmans gives the following new records: *Macdonaldius* sp. in sheep in New Mexico; *Ovis canadensis* and *Bison bison*, new hosts for *Moniezia benedeni*; and some new locality records for deer, goat and cattle nematodes. B.G.P.

380—Proceedings of the Imperial Academy (of Japan).

a. OZAKI, Y.—" *Petalocotyle nipponica*, a new type of the trematode family Allocreadiidae." X (2), 111-114. [1934.]
b. OZAKI, Y. & ISHIBASHI, C.—" Notes on the cercaria of the pearl oyster." X (7), 439-441. [1934.]

(a) *Petalocotyle nipponica* n. g., n. sp. has petal-like appendages around the orifice of the large ventral sucker. There is also a remarkable lymph canal system. The genus belongs to the Allocreadiidae and has some superficial resemblances to the genus *Lepidapedon*. R.T.L.

(b) *Bucephalus margaritae* n. sp. which infects the gonad and liver of the pearl oyster *Pictada martensi* is closely related to *B. haimeanus* from the oyster in America. R.T.L.

381—Proceedings of the Japanese Pharmacological Society.

a. ESASHI, K.—" Über den wurmwidrigen Bestandteil des *Caucalis scabra*, Makino und seine pharmakologische Wirkung." 8th Annual Meeting, p. 54."

(a) Esashi has extracted from the fruit of *Caucalis scabra* Makino, a crystalline substance which possesses anthelmintic properties. Ten cases infected with *Ascaris* were given 0·01 gm. of this substance, along with " Laxatol," on each of two days. In six of these cases *Ascaris* worms were expelled. R.H.H.

382—Proceedings of the Linnean Society of New South Wales.

a. JOHNSTON, T. H.—" Notes on some Monocotylid trematodes." LIX (1/2), 62-65. [1934.]
b. JOHNSTON, T. H.—" Remarks on some Australian Cestodaria." LIX (1/2), 66-70. [1934.]

(a) Johnston redescribes *Monocotyle robusta* and transfers it to a new genus, *Monocotyloides*. In addition *M. selachii* is transferred to *Paramonocotyle* n. g. B.G.P.

(b) The amphilinid cestode *Kosterina kuiperi* Ihle & Ihle-Landenberg, 1932 is claimed by Johnston to be a synonym of *Austramphilina elongata* Johnston, 1931. Notes are given on other Australian Cestodaria. B.G.P.

383—Proceedings of the Oklahoma Academy of Science.

a. TROWBRIDGE, A. H. & HEFLEY, H. M.—" Preliminary studies on the parasite fauna of Oklahoma anurans." XIV, 16-19. [1934.]
b. BRAGG, J. H.—" Some observations on the staining of tapeworms." XIV, 21-22. [1934.]
c. WARD, J. W.—" A study of some parasites of rabbits of central Oklahoma." XIV, 31-32. [1934.]

(a) Trowbridge and Hefley give the following list of the helminth parasites of the anurans of Oklahoma :—Trematodes : *Glypthelmins quieta*, *Diplodiscus temporatus*, *Gorgodera circava*, *G. amplicava*, *Pneumonoeces breviplexus* and *P. longiplexus* ; Cestodes : *Ophiotaenia magna* and *Cylindrotaenia americanum* ; Nematodes : *Oswaldocruzia collaris*, *O. pipiens*, *Rhabdias ranae*, *Foyella* sp., *Spinitectus* sp., *Spironoura catesbeianae*, *Oxysomatium americana* and *Physaloptera ranae*. R.T.L.

(b) Bragg uses the following method of preparing microscopic slides of tapeworms : (i) kill and fix tapeworms in hot Bouin's fluid one hour ; (ii) wash in 70 per cent. alcohol one hour or until Picric acid is removed ; (iii) wash in 50 per cent. alcohol ; (iv) stain in aqueous solution of Delafield's Hematoxylin 48 hours ; (v) remove calcium by immersion in a solution of 2 per cent. acetic acid with 5 per cent. commercial formalin for 7 hours ; (vi) wash in 50 per cent. alcohol for one hour ; (vii) stain in Borax Carmine 48 hours ; (viii) destain in acid alcohol until tapeworms take on a red appearance ; (ix) wash in 70 per cent. alcohol and place between glass slides held together by paper clips. Strips of cardboard should be placed between the ends of the slides ; (x) complete the dehydration, clear in Carbol Xylol from 95 per cent. alcohol, and mount in Balsam. R.T.L.

(c) Four species of cestodes and seven of nematodes were collected in Central Oklahoma from a series of rabbits belonging to the species *Sylvilagus floridanus*, *Lepus californicus* and *L. aquaticus*. R.T.L.

384—Proceedings of the Society for Experimental Biology and Medicine.

a. BACHMAN, G. W. & OLIVER, J.—" Virulence of *Trichinella spiralis* in a natural and in an experimental host." XXXII (1), p. 96. [1934.]
b. HARWOOD, P. D.—" Effect of certain physical factors on the *in vitro* testing of anthelmintics." XXXII (1), 131-133. [1934.]

(a) While trichina worms seem to lose virulence after successive passage through experimental and unnatural hosts, e.g. rabbits, they retain their virulence and power to penetrate muscles in their natural host, e.g. rat. R.T.L.

(b) Harwood shows that, for various reasons, an anthelmintic solution containing an excess of drug in the liquid state is much more effective than one where the excess of drug is in the solid state. He outlines methods of producing a liquid excess, and gives tables showing the effect by the different processes on the time of killing *Ascaris lumbricoides* of pigs. E.M.S.

385—Proceedings of the West Virginia Academy of Science.

a. WEIMER, B. R., HEDDEN, R. S. & COWDERY, K.—" Flat-worm and round-worm parasites of wild rabbits of the Northern Panhandle." VII, 54-55. [1934.]

(a) The relative frequency of *Cittotaenia ctenoides*, *Passalurus ambiguus*, *Taenia pisiformis*, *Obeliscoides cuniculi* and *Trichuris leporis* in the wild rabbit in Northern Panhandle is recorded. R.T.L.

386—Proceedings of the Zoological Society of London.

a. WOODLAND, W. N. F.—" On six new cestodes from Amazon fishes." Part I, pp. 33-44. [1934.]

(a) Woodland describes the following new forms :—*Megathylacus jandia* n. g., n. sp. and *Proteocephalus jandia* n. sp. from *Rhamdia* sp., *Anthobothrium pristis* n. sp. from *Pristis perotteti*, *A. karuatayi* n. sp. from *Glanidium* sp., *Tentacularia araya* n. sp. from *Trygon* sp. and *Monticellia megacephala* n. sp. from *Platystomatichthys sturio*. The new genus, *Megathylacus* is distinguished from *Proteocephalus* by the large scolex and unusual development of the suckers. E.M.S.

387—Profilassi.

a. RHO, G.—" Caso triplo di " Botriocephalus latus " nel cane." VII (3), 106-108. [1934.]
b. BRANCHINI, B.—" Un caso di tricoeafalosi [tricocefalosi] nel cane." VII (8), 288-294. [1934.]

(a) Using 4 gm. of Kamala, Rho expelled three *Dibothriocephalus latus* from an English Greyhound in Milan. The dog had an eosinophilia of 7·14 per cent. (normal : 0·5-2 per cent.). Rho briefly reviews 10 previous records from the literature. B.G.P.

(b) Branchini reports at length a case of *Trichocephalus depressiusculus* (*Trichuris vulpis*) in a dog in Italy, clinically cured by a course of thymol followed by a course of carbon tetrachloride. [The life-history is said to be like that of the hookworms, on the authority of numerous distinguished helminthologists who were, in fact, dealing with hookworms and not at all with *Trichuris* !] B.G.P.

388—Progress Notes. Hawaii Station, Animal Husbandry Division.

a. RILEY, M. K.—" The liver fluke disease of cattle." No. 5, 10 pp. [1934.]

(a) Riley describes in popular language the life-history of, and the clinical symptoms produced by, liver fluke infestation in cattle. He discusses possible means of controlling the disease mentioning in particular the use of $CuSO_4$ for the eradication of the snail intermediate host. He has found that 75 per cent. of the dairy cows in Hawaii are infested. P.A.C.

389—Pubblicazioni della Stazione Zoologica di Napoli.

a. PALOMBI, A.—"Bacciger bacciger (Rud.) Trematode digenetico: fam. Steringophoridae Odhner. Anatomia, sistematica e biologia." XIII (3), 438-478. [1934.]

b. PALOMBI, A.—"Gli stadi larvali dei Trematodi del Golfo di Napoli. I°. Contributo allo studio della morfologia, biologia e sistematica delle cercariae marine." XIV (1), 51-94. [1934.]

(a) Palombi gives a detailed and fully illustrated description of the adult and all the larval stages of *Bacciger bacciger*. An account of the biology and life-history fills in certain lacunae which were present in his earlier papers [see Helm. Abs., Vol. II, No. 331a]. B.G.P.

(b) Palombi describes 13 species of larval trematodes from the Gulf of Naples, including the following new species: *Metacercaria* (*Gymnophallus*) *megacoela*, *M.* (*Himasthla*) *ambigua*, *Cercaria ophiocerca*, and *M. ackerusiae*. B.G.P.

390—Public Health Reports, Washington.

a. FRANT, S.—"Five years' experience with trichinosis in New York City." XLIX (30), 869-875. [1934.]

(a) 166 cases of trichiniasis were reported to the New York Department of Health for the years 1929-1933. Frant discusses the sources of meat alleged to have caused the infections. In 52 cases pork sausages were eaten and of these 14 had eaten raw sausages. Of the 86 cases which gave a history of eating fresh pork 15 admitted eating the pork raw. The majority of the cases occurred in persons between 20 and 35 years of age and were preponderantly in those of German and Italian extraction. R.T.L.

391—Puerto Rico Journal of Public Health and Tropical Medicine.

a. HOFFMAN, W. A., PONS, J. A. & JANER, J. L.—"The sedimentation-concentration method in Schistostomiasis mansoni." IX (3), 283-291. [1934.]

b. FAUST, E. C., JONES, C. A. & HOFFMAN, W. A.—"Studies on Schistostomiasis mansoni in Puerto Rico. III. Biological studies. 2. The mammalian phase of the life cycle." X (2), 133-196. [1934.]

(a) A sedimentation-concentration method is given which the authors have found superior to the routine smear method for the diagnosis of bilharzia eggs in faeces. Definite indications were obtained by this method that the ova of *Schistosoma mansoni* are apparently not noticeably affected by Fouadin. R.T.L.

(b) The course of migration and the detailed development of *Schistosoma mansoni* in the mammalian host has been studied step by step. The larvae reach the lungs 22 hours after invading the skin and normally traverse the capillary field. Those which break out of the lungs into the pleural cavity are lost. Feeding takes place only in the intrahepatic portal system which is reached via the mesenteric capillaries. Twenty-four stages of development are described. It takes from 37 to 44 days for eggs to appear in the stool. The haematological changes are described and it is noted that the degree of anaemia depends on the severity of the infection rather than on its duration. R.T.L.

392—Recueil de Médecine Vétérinaire.

a. CHAVANCE, J.—" Strongylose équine." CX (4), 202-205. [1934.]

(a) For equine strongylosis Chavance recommends a treatment consisting of an anthelmintic and, on the 4th day after, a depurative agent. The anthelmintic is chloroform 20 c.cm., essence of turpentine 100 c.cm. and castor oil 375 c.cm. Details are given for suitable diet before and after treatment, adequate feeding is recommended as a prophylactic, and the clinical manifestations of strongylosis in horses are outlined. B.G.P.

393—Report (Biennial) of the California Agricultural Experiment Station. 1932-34.

a. ANON.—" Resistance to root-knot nematode." pp. 70-71. [1934.]

(a) As apricot seedlings, which are almost immune to root-knot, are unsatisfactory as rootstocks for almonds and peaches, peach and nectarine varieties have been tested for resistance to root-knot. Of several hundred varieties, two peach stocks, Shalil and Bokhara, have given satisfactory results over a period of four years. Other promising varieties of peaches are being further tested. M.J.T.

394—Report of the Chief of the Bureau of Plant Industry, United States Department of Agriculture, 1934.

a. AUCHTER, E. C.—" Division of fruit and vegetable crops and diseases." pp. 11-16. [1934.]
b. STEINER, G.—" Division of Nematology." pp. 17-18. [1934.]

(a) The Shalil peach (F.P.I. 63850 introduced from India) used as understock shows complete resistance to nematode attack; under severe tests the roots remained free from galls. M.J.T.

(b) Steiner reports the discovery of *Heterodera schachtii* forming a natural infection on shadscale, a native weed in the Utah desert, and discusses the economic significance of this occurrence. Although supposed to have been imported in beet seed from Europe the behaviour of the nematode in the United States differs from the behaviour shown in Europe where potatoes, beans, peas, wheat, rye and barley are attacked, all of which plants are immune in the United States. Since shadscale belongs to the Chenopodiaceae the indigenous infection on this host would transfer its attack to beet more readily than to other plants and infection of sugar beet grown on primeval land which has harboured this weed is thus explained. M.J.T.

395—Report. Department of Agriculture, Government Research Institute, Formosa, Japan.

a. SUGIMOTO, M.—" Morphological studies on the avian cestodes from Formosa." No. 64, 52 pp. [1934.]

(a) In this paper on Formosan avian cestodes, which is in Japanese without diagnoses in a European language, Sugimoto describes and illustrates, *inter alia*, the following 5 new species: *Hymenolepis angularostris*, *H. giranensis*, *H. oshimai* and *Diorchis formosensis*, all from *Anas platyrhyncha*, and *D. crassicollis* from *Columba livia*. Fifteen previously known species are also illustrated. B.G.P.

396—Report of the South Carolina Agricultural Experiment Station. 1934.

a. ARNDT, C. H.—[Report on the effect of nematode (*Aphelenchoides parietinus*) on cotton seedling growth.] p. 37. [1934.]

(a) Arndt reports briefly on investigations designed to elucidate the rôle of *Aphelenchoides parietinus* and other soil nematodes which have been found associated with damping-off of cotton seedlings particularly when grown at 21° to 22°C. It is suggested that the nematodes carry the spores of pathogenic fungi and afford entry for these by their puncturing of the seedling's tissues. T.G.

397—Revista do Departamento Nacional da Producção Animal.

a. FARIA, A. & SILVA, D.—" Garoupa Vermelha de Abrolhos e S. Thomé ' Garoupa Bichada ' ' Tetrarhynchus '." I (2/4), 5-22. [1934.]
b. DOS SANTOS, V.—" Monostomose renal das aves domesticas." I (2/4), 203-211. [1934.]
c. TORRES, S.—" Doenças dos animaes no Alto Rio Branco." I (2/4), 245-275. [1934.]

(a) Faria and Silva record 21 teleostean fish in which they have found tetrarhynchid larvae; adult forms have been found in several selachians. They suppose that 3 or 4 different species of cestode are involved [there is no attempt at identification]. B.G.P.

(b) Dos Santos describes a new monostome *Tamerlania bragai* n. sp., from the kidneys and ureters of 15 per cent. of pigeons in Rio de Janeiro, and amplifies the generic diagnosis of *Tamerlania* which was formerly monotypic. B.G.P.

(c) Torres describes the topography of the Rio Branco basin, the extent of animal industry in it, and the diseases of the domestic animals. The common helmintic diseases are included, and appear to be of considerable importance in the locality. B.G.P.

398—Revista de Higiene y Sanidad Pecuarias.

a. SOLER, R. R.—" Contribución al estudio de la parasitología intestinal del cerdo de la región valenciana." XXIV (5/6), 343-361. [1934.]

(a) Soler describes the various methods of examining faeces for the eggs and cysts of parasites, and gives the results of examining the faeces of 200 pigs in Valencia. The helminths, in order of frequency, are: oesophagostomes, Ascaris, Trichuris and Strongyloides. B.G.P.

399—Revista de Industria Animal. São Paulo.

a. MELLO, A. & MELLO, M. J. DE—" Suinocultura." II (1), 58-80. [1934.]

(a) A popular account of the pig-breeding industry in Brazil stressing the importance of the common helminths, the life-histories of which are diagrammatically illustrated. B.G.P.

400—Revue de Microbiologie, d'Épidémiologie et de Parasitologie.

a. SCHULZ, R. E. & LANDA, D. M.—" Parasitische Würmer der grossen Rennmaus—*Rhombomys opimus* Licht." XIII (4), 305-315. [In Russian: German summary p. 315.] [1934.]
b. SKWORTZOW, A. A.—" Zur Kenntnis der Helminthenfauna der Wasserratten (*Arvicola terrestris* L.)." XIII (4), 317-326. [In Russian: German summary p. 326.] [1934.]
c. SASSUCHIN, D., TIFLOW, V. & SCHULZ, R. E.—" Endo- and ectoparasites of *Rhombomys opimus* Licht. Communication III." XIII (4), 335-338. [In Russian.] [1934.]

(a) Schulz and Landa list 11 helminthic species found during the complete dissection of 376 *Rhombomys opimus* from various parts of central Asia. Descriptions and figures are given for the following new species: *Trichocephalus rhombomidis*, *Hydatigera krepkogorski* (cysts; also in *Gerbillus meridianus*), and *Catenotaenia rhombomidis*. B.G.P.

(b) Among 10 species of helminths listed by Skwortzow as having been found in 30 *Arvicola terrestris* from the Volga, are the following new trematodes: *Notocotylus* (*Quinqueserialis*) *wolgaensis* n. subgen., n. sp., *Psilotrema marki* n. sp., and *Echinoparyphium sisjakowi* n. sp., all of which are described and figured. B.G.P.

(c) Sassuchin, Tiflow and Schulz give a list of the parasites recorded from *Rhombomys opimus* and a bibliography of 45 titles. The material is arranged in the groups: Intestinal Parasites (protozoa and helminths), Blood Parasites (protozoa), Ectoparasites. B.G.P.

401—Riforma Medica.

a. GIAQUINTO MIRA, M.—" Sulla presenza delle microfilarie di *Onchocerca coecutiens* Brumpt nel nervo ottico." L (22), 858 & 861. [1934.]

(a) Mira gives a preliminary note of a case in which microfilariae of *Onchocerca caecutiens* were revealed in serial sections of the optic nerve. After the successive formation of numerous occipital nodules the patient, a Guatemalan Indian, lost the sight of his right eye completely and agreed to its enucleation. Impairment of vision in both eyes and " coastal erysipelas " had both been alleviated by the extirpation of earlier nodules.
B.G.P.

402—Schweizer Archiv für Tierheilkunde.

a. GRIEDER, H.—" Beobachtungen über Rehkrankheiten in nordostschweizerischen Jagdrevieren." LXXVI (12), 609-617. [1934.]

(a) Grieder has been able to observe the parasitic diseases of Roe Deer in Switzerland during the years 1929 to 1933. His helminthic material, based on 21 fawns, 25 roebucks and 35 does, includes *Dictyocaulus viviparus*, *Haemonchus contortus*, *Chabertia ovina* and *Setaria labiato-papillosa*. Brief notes on each are given and infested organs are illustrated. B.G.P.

403—Schweizerische Medizinische Wochenschrift.

a. WILD, O. & LOERTSCHER, M.—" Zur Aetiologie der flüchtigen Lungen-Infiltrierungen." LXIV (36), 829-830. [1934.]

(a) In the routine pulmonary X-ray examination of school children, Wild and Loertscher occasionally find transient infiltration-shadows in cases where no diagnosis of tuberculosis can be made. Two such cases, here described, displayed also eosinophilia in the blood and Ascaris ova in the stool, and the authors suggest that the pulmonary infiltrations are here due to the migration of Ascaris larvae. B.G.P.

404—Science Reports of the Tokyo Bunrika Daigaku, Section B.

a. OGATA, T.—" Note sur un nouveau trématode *Cephalogonimus japonicus*, parasite intestinal de la tortue comestible l'*Amyda japonica*." II (Report No. 30), 45-53. [1934.]

(a) *Cephalogonimus japonicus* n. sp. is described by Ogata from the small intestine of *Amyda japonica*, a fresh-water turtle. The trematode is close to *C. americanus*. A key to the existing species of *Cephalogonimus* is given. B.G.P.

405—Scientific Agriculture.

a. PARNELL, I. W.—" Some methods of controlling the spreading of internal parasites of the horse." XV (3), 165-168. [1934.]

(a) Parnell finds that the larvae of horse parasites are killed when the droppings are soaked with urine. Urea is also lethal to the parasites in 48 hours when applied at the rate of ½ gram to 40 grams of faeces. Artificial manures, lime and common salt are not considered practicable. Frequent harrowing of pastures in order to expose larvae to physical agents is recommended and as disinfectants for use in stables, 3 per cent. lye and 5 per cent. lysol have been found effective. D.O.M.

406—Sinensia. Contributions from the Metropolitan Museum of Natural History, Nanking.

a. TANG, S. T.—" Descriptions of three new species of the Nematomorpha of Fukien." IV (7), 201-208. [1934.]
b. LU, S. C.—" On *Rhabdias*, a genus of parasitic Nematoda, of Nanking." V (1/2), 164-172. [1934.]

(a) Tang gives morphological descriptions of 3 Gordiids, all males, from Fukien Province. *Gordius amoyensis* n. sp., from Amoy, is nearly related to *G. robustus* but differs from it in having the ventral band extending to the margin of the anus, the dorsal band disappearing before reaching the posterior lobes, and in its greater body diameter. *G. foochowensis* n. sp., from the campus of Fukien Christian University, Foochow, is closely related to *G. villoti* (also cited as *villati* in the text) but differs from it in having a short, broad and truncate post-cloacal lamina which passes through a short distance into the lobes, which are nearly parallel and confine a very narrow inter-lobular space. *G. polychaetus* n. sp., from the same locality as the preceding species, also resembles *G. villoti* from which it differs in the shape and arrangement of the post-cloacal lamina and the form of the posterior

lobes. The shape of the anus and divergence of the posterior lobes serve to distinguish the last two new species. J.N.O.

(b) Of the 21 species described in the genus *Rhabdias* 3 are known for China. Miss Lu describes 5 species collected by her, viz., *R. fuscovenosa*, *R. annulosa*, *R.* sp. ?, *R. incerta* and *R. bicornis* n. sp. The last which occurred in large numbers in the common Asiatic toad is closely related to *R. bufonis* but has two lateral lips. R.T.L.

407—Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin.

a. SCHMID, F.—" Zerlegungsbefunde bei Reptilien und Amphibien." 1933 (8/10), 462-477. [1934.]
b. MÜLLER, F. R.—" Ein Beitrag zur Entwicklung des Lungenwurmes *Neostrongylus linearis* Marotel (1913)." 1934 (4/7), 158-161. [1934.]
c. MÜLLER, F. R.—" Ein neuer Trichostrongylide." 1934 (4/7), 161-164. [1934.]

(a) Schmid examined about sixty reptiles and amphibia. On the whole they were only slightly infested with parasites. These unfortunately were identified only in a few instances. A provisional attempt was made to associate their presence with pathological lesions. R.T.L.

(b) Müller has studied the development of *Neostrongylus linearis* from material obtained from a chamois in the Berlin Zoological Gardens.

The first stage larva, deposited with the faeces, is described. Little development occurred in the open but larvae remained viable for at least 28 days in damp faeces at room temperature. Further development took place by feeding larvae to the following snails : *Deroceras* (*Agriolimax*) *agreste*, *Arion subfuscus*, *A. hortensis*, *Fructicicola striolata*, *Cepaea nemoralis*, *C. hortensis*, *Arianta arbustorum* and *Helix pomatia*. The parasites were found principally in the musculature of the foot and the first moult was observed 6 to 8 days after feeding. The infective stage was reached after the second moult 10 to 14 days after infection of the snails. Both second and infective stages are briefly described. The feeding of infected snails to rabbits and sheep gave negative results because these animals, in the author's opinion, were abnormal hosts of this lungworm. J.N.O.

(c) Müller records from *Capra hircus* the following nematodes : 4 species of *Trichostrongylus* including *T. probolurus* for the first time from the goat ; *Oesophagostomum venulosum* ; 3 species of *Nematodirus* including *N. longispiculatus* n. sp. of which an illustrated description is given. The spicules measure 13 mm. in length as compared with 1 mm. to 5 mm. in other species of the genus. B.G.P.

408—Skrifter Utgivna av Södra Sveriges Fiskeriförening.

a. NORDQVIST, H.—" Smärre meddelanden om några karpsjukdomar." 1934 (No. 1), 4-24. [1934.]

(a) Nordqvist discusses the disease of the carp caused by the parasite *Dactylogyrus vastator*. No new facts are brought forward but he stresses the point that the spawn becomes infected primarily from the bottom of the pond though free-living larvae may help in the spread of the disease. Smallpox and ascites are also discussed. P.A.C.

409—Smithsonian Miscellaneous Collections.

a. WEHR, E. E.—" A new nematode of the genus *Diplotriaena* from a Hispaniolan woodpecker." XCI (5), 1-3. [1934.]
b. CHITWOOD, B. G.—" Two new nematodes. (Reports on the collections obtained by the First Johnson-Smithsonian Deep-Sea Expedition to the Puerto Rican Deep)." XCI (11), 1-4. [1934.]
c. WRIGHT, W. H. & McALISTER, E. D.—" The effect of ultraviolet radiation on the ova of the ascarid roundworms *Toxocara canis* and *Toxascaris leonina*." XCIII (1), 1-13. [1934.]

(a) Wehr describes *Diplotriaena serratospicula* n. sp. from the body cavity of *Chryserpes striatus* in Dominica. B.G.P.

(b) Chitwood describes *Parathelandros anolis* n. sp. from the lizard *Anolis cristatellus* and *Ascarophis cestus* n. sp. from a deep-sea fish *Coelorhynchus* sp. R.T.L.

(c) Wright & McAlister find that ultraviolet light is lethal to the ova of *Toxascaris leonina* and *Toxocara canis*. The pigmented mamillated shells of *T. canis* appear to withstand the penetrating action of the rays better than do the clear unpigmented shells of Toxascaris ova. They suggest further that the lethal action of sunlight is due only in part to the ultraviolet rays and is mainly due to desiccation and high temperature. P.A.C.

410—Taiwan Igakkai Zasshi.

a. YOSHINO, K.—" On the evacuation of eggs from the detached gravid proglottids of *Taenia solium* and on the structure of its eggs." XXXIII (1), 47-58. [English summary pp. 3-4.] [1934.]

(a) The mode of detachment of mature Taenia segments and the extrusion of eggs is described. It is noted that the onchospheres may abnormally have 8, 10, 12, 14, 16 or even 18 hooks. R.T.L.

411—Technical Bulletin. Minnesota Agricultural Experiment Station.

a. MACY, R. W.—" Studies on the taxonomy, morphology, and biology of *Prosthogonimus macrorchis* Macy, a common oviduct fluke of domestic fowls in North America." No. 98, 71 pp. [1934.]

(a) Macy's monograph deals with all aspects of the problem of the oviduct fluke of birds, as it occurs in the Great Lakes region, through infestation with *Prosthogonimus macrorchis* Macy.

The disease is responsible for tremendous decrease in egg production of domestic fowl, and a high rate of mortality among infested birds. The genus *Prosthogonimus* is reviewed and the taxonomy and differentiation of all the species fully dealt with. The life-cycle of *P. macrorchis* is described, the first intermediate host being the snail *Amnicola limosa porata*, the cercaria developing from the sporocyst without a redia stage. The cercaria obtains passive admission to the second intermediate host, dragonfly larvae of the genera *Leucorrhinia*, *Tetragoneuria*, *Epicordulia* and *Mesothemis*, by being sucked into the anal respiratory chamber. Hens become infected by eating larval or adult dragonflies containing metacercarial cysts and are therefore best protected by fencing away from lake shores where these insects are

abundant. Experimental infestations were produced in ducks, crows, chicks and sparrows which may thus serve as reservoir hosts. Macy believes the normal host to be the duck and the natural habitat the bursa Fabricii.

Hens could only be infected experimentally in the laying condition, the flukes maturing rapidly and disappearing within five weeks. Egg production almost ceased, and the few laid were often soft-shelled or contained live flukes. Positive diagnosis is difficult as eggs cannot always be demonstrated in the faeces. Carbon tetrachloride is recommended for treatment but care must be used due to its toxicity. E.M.S.

412—Technical Bulletin. United States Department of Agriculture.

a. SCHWARTZ, B. & ALICATA, J. E.—" Life history of lungworms parasitic in swine." No. 456, 41 pp. [1934.]

(a) In this Technical Bulletin No. 456 issued by the United States Department of Agriculture, Washington, Schwartz and Alicata give an account of their experimental work on three species of lungworms found in pigs in U.S.A. The larval stages in earthworms and those obtained subsequently in the definitive host are described. The route from the intestine to the lungs is by the lymph and the right heart. Pathological changes in the lungs result from the migration of the larvae 3 days after ingestion. There is coughing and some respiratory disturbances are noticeable. In dogs and guineapigs experimental infections reached maturity without egg production. R.T.L.

413—Tierärztliche Rundschau.

a. SCHMID, F.—" Beitrag zur Technik der Kotuntersuchung, insbesondere zur Untersuchung von Hühnerkot." XL (28), 467-469. [1934.]

(a) Schmid finds that a concentrated potash solution with specific gravity 1·56 is the most satisfactory medium for floating up from faeces eggs of many bird parasites. By centrifuging in this solution and removing the eggs on a cover slip he has demonstrated the presence of Heterakis, Ascaridia and Capillaria in chicken faeces and of hookworm and ascaris eggs and lungworm larvae in silver foxes. Potash is better than the usual salt solution.

P.A.C.

414—Tijdschrift voor Diergeneeskunde.

a. TENHAEFF, C. & FERWERDA, S.—" Vergelijkende statistiek omtrent de echinococcosis bij het vee in Mecklenburg en Friesland en het gevaar van den heemhond als bron van infectie." LXI (4), 169-180. [1934.]
b. JANSEN, J.—" Kippenziekten op kleine onhygiënische Bedrijven." LXI (4), 185-189. [1934.]
c. BOER, E. DE—" Over den invloed van Vitakalk op de ontwikkeling van Ascarislarven bij de cavia." LXI (14), 750-760. [1934.]

(a) Tenhaeff and Ferwerda give statistics of the incidence of hydatid in various domestic animals and man, and of Echinococcus in dogs, in Friesland and in Mecklenburg. These show that, although the parasite is commoner in man and in dogs in Friesland, it is commoner in cattle in Mecklenburg. In the latter province the farm dogs are alone infected, whereas in Friesland dogs used as draught animals are also involved. Compulsory meat

inspection, which is rapidly reducing hydatid in Friesland, should be extended to the whole of Holland. B.G.P.

(b) After examining 1,000 fowls, Jansen finds that where modern methods of farming are in force, disease is brought to a minimum and certain infectious diseases, *e.g.* tuberculosis, have been almost eradicated. However, in 500 birds from old fashioned farms he encountered many cases of serious disease. Of parasitic diseases davaineasis and coccidiosis were very prevalent. P.A.C.

(c) The author was unable to confirm the findings of Winnitzky that the vitamin-calcium preparation " Vitakalk " increases the resistance of guinea-pigs to infection with *Ascaris* larvae.

For two months 20 guinea-pigs received 2·5 gm. per kilo body weight of " Vitakalk " added to their daily ration, while 10 controls received only the usual food. The weekly weights of the animals during this period show nothing in favour of the supplement, rather the reverse. At the end of the two months each animal was dosed into the stomach with 100,000 mature larvae of the pig ascaris incubated in 2 per cent. formalin at 26°C. for at least six weeks. Four to five days later the animals were clincially examined and then killed. The liver and lungs were examined for pathological changes and the number of larvae present in each of these organs was carefully estimated. There was no evidence of greater resistance in the animals which had received the supplement. H.M.

415—Transactions of the American Fisheries Society.

a. PARNELL, I. W.—" Fish parasites and their importance." LXIV, 390-400. [1934.]

(a) In North America *Cyclops brevispinosus*, *C. prosinus* and *Diaptomus oregonensis* are efficient first intermediaries for *Diphyllobothrim latum*; *Esox lucius*, *Stizostedion vitreum*, *Cynoperca canadensis*, *Lota maculosa* and *Perca flavescens* are the second intermediate hosts. The pelicans in Yellowstone Lake are heavily infested with *Dibothrium cordiceps* from *Salmo mykiss*. *Troglotrema salmincola* occurs in dogs, lynx, coyote and racoon; it has been reported as far east as Ontario. In Quebec *Toxotrema venustus* occurs in cats. Parasites may play a part in the balance of nature by controlling predatory fish. R.T.L.

416—[Transactions on the Dynamics of Development.]

a. HELLER, M.—" Quelques observations sur la biologie de la *Trichinella spiralis*." VIII, 167-185. [In Russian : French summary pp. 183-184.] [1934.]
b. ZVIAGINZEV, S. N.—" Contribution to the history of development of *Nematodirus helwetianus* [*helvetianus*] May." VIII, 186-202. [In Russian : English summary pp. 201-202.] [1934.]
c. ZAVADOWSKY, M. M. & VOROBIOVA, E. I.—" Does winter frost free the ground of the Trichostrongylidae larvae?" VIII, 203-206. [In Russian : English summary p. 207.] [1934.]

(a) By the method of cutting serial sections of small intestine at fixed times after feeding Trichinella larvae to animals, Heller concludes that the larvae can excyst within an hour of being fed, that the females have become

adult and contain embryos within 48 hours, and that the embryos are born within 80 to 90 hours (in mice and cats). The adults attach themselves to the mucosa which they penetrate. After feeding infective larvae to an animal, the new generation become infective by the 17th or 18th day, in the absence of encapsulation, which requires 4 weeks. B.G.P.

(b) Zviaginzev finds that the eggs of *Nematodirus helvetianus* hatch on about the 10th day at the optimum temperature, 28° to 29°C. Frost, or absence of oxygen, merely suspend development. The larvae support dry heat up to 60°C., and at ordinary temperatures can withstand desiccation for at least 8 months. After infection by mouth the larvae become adult in 3 to 4 weeks. B.G.P.

(c) Zavadowsky and Vorobiova conclude that between 97 and 99 per cent. of trichostrongyle larvae fail to survive 4 months of winter conditions as found at Moscow. The few that do survive are probably too weak to be infective. B.G.P.

417—Transactions of the Japanese Pathological Society.

a. TSUNODA, T., SHIRAI, S. & NAKAMOTO, T.—"Über eine Art von Blasenwurm, der bei wildlebenden Hasen vorkommt." XXIV, 402-404. [1934.]

(a) In the neighbourhood of Yoshinogawa 20 per cent. of the hares have subcutaneous coenuri. R.T.L.

418—Transactions of the Royal Society of Tropical Medicine and Hygiene.

a. MACARTHUR, W. P.—"Cysticercosis as seen in British army, with special reference to the production of epilepsy." XXVII (4), 343-363. [1934.]

(a) MacArthur has carried out investigations to determine, as far as possible, the degree of responsibility of cysticercosis for the production of epilepsy, his experience being limited, almost entirely, to soldiers of the British Army serving or discharged [see Helm. Abs., Vol. II, No. 123b].

In 1933, in Millbank Military Hospital, 20 cases of cysticercosis were diagnosed. In the majority of cases there was no evidence of infestation with adult *Taenia solium* at any time, which rendered the incubation period difficult to fix. Palpable cysts vary widely in numbers in different cases, appearing singly or in dozens and eventually disappearing. In the brain the dead and disintegrating cysticercus is surrounded by tissue undergoing active degeneration. If the patient survives the damaged tissue may undergo necrosis and later be ringed off by neuroglia sclerosis. About 3 years is given as the period in which the scolex calcifies after death of the cyst in the muscle, but the interval is considerably longer in the brain. Eosinophilia, and skin and complement fixation tests may be negative even in heavy infestations. No medical treatment so far employed has had any curative effect; in fact the author considers a drug lethal to the cysts might make matters worse. The many and widespread cerebral cysts, which are the rule, do not encourage a resort to surgery. The extent of indigenous cysticercosis in England is

unknown but the author thinks that a diligent search amongst epileptics might produce surprising results. In a discussion following the delivery of the paper the author replies to several queries raised by numerous speakers. J.N.O.

419—Transactions of the Sapporo Natural History Society.

a. SHIMAKURA, K. & ODAJIMA, K.—" *Soboliphyme sahalinense* n. sp., (Nematodes) from *Martes zibellina sahalinensis* Ognev." XIII (3), 341-350. [1934.]
b. FUJITA, K. & MIURA, O.—" On the parasitism of *Heterodera schachtii* Schmidt on beans." XIII (3), 359-364. [1934.]

(a) Shimakura and Odajima give a description of the genus *Soboliphyme* Petrow, 1930 with a key to the determination of the species, *S. baturini* Petrow, 1930 and *S. sahalinense* n. sp. A detailed description of *S. sahalinense* is given. The new species described differs from the type species in that it is larger but relatively more slender, with a relatively larger copulatory bursa. M.J.T.

(b) Fujita and Miura describe symptoms of " yellow dwarf," a disease of Soy beans caused by *H. schachtii* in Japan, and record the results of transmission experiments to determine the host range of the strain involved. Soy bean, adzuki bean, kidney bean and multiflora bean were attacked but 18 other plant species, including the common hosts of most European strains of the parasite, and notably pea, vetch, red clover, cow-pea, peanut, broad bean and lima bean, gave negative results. M.J.T.

420—United Provinces Veterinary Magazine.

a. MALKANI, P. G.—" Discovery of the cause of nasal granuloma in cattle." XXII (10), 609; XXIII (3), 4-9; (4), 8-10; (5), 4-8; (6), 8-10; (7), 1-7. [1934.]

(a) Nasal granuloma in Indian cattle and occasionally in buffaloes is due to the eggs of a species of Schistosoma slightly different from *S. spindalis*. Tartar emetic has a specific value in treatment and prophylaxis. R.T.L.

421—Verhandlungen der Deutschen Gesellschaft für Kreislaufforschung.

a. OLT, A.—" Die Thrombose beim Aneurysma verminosum des Pferdes." VII, 66-68. [1934.]
b. KRAUSE, C.—" Zur Thrombose und Embolie der Grimmdarmarterien des Pferdes." VII, 69-73. [1934.]

(a) Olt reaffirms his theory of the mechanism by which verminous aneurysms in horses, due to *Strongylus vulgaris*, are produced.

Some of the larvae enter the intestinal wall and migrate forwards between the mesenteric layers. Their path is obstructed by the numerous vascular branches at the root of the mesentery and they then penetrate from the adventitia through the media and intima of the vessels to the lumen. The thick muscular layer of the ileo-caeco-colic artery forms the greatest obstruction and there is an intense reaction which eventually leads to aneurysm

through the weakening of the vessel wall. If the numerous nerves of the coeliac plexus are invaded intestinal paresis and colic may result from the chronic perineuritis induced by the formation of cicatricial tissue. R.T.L.

(b) Krause reviews earlier work by Bollinger, Franck, Dobberstein and Hartmann on the relation of thrombosis due to *Strongylus vulgaris* on the production of colic in horses as an effect of circulatory disturbances.

Krause has no doubt that linear inflammatory thromboses which result from the migration and penetration of the young sclerostomes constrict the lumen of the arteries. In old horses 40 per cent. of the cases showed that the anastomosis of the pelvic flexure was occluded and resulted in irreparable disturbances of the circulation. He concludes that thrombotic and embolic conditions in the region of the colic arteries, not only in the anterior root of the mesentery, play a decisive part in the production of the common kinds of colic in horses and particularly in those of recurrent type. R.T.L.

422—Verhandlungen der Deutschen Zoologischen Gesellschaft.

a. STAMMER, H. J.—" Die Nematoden als Kommensalen und Parasiten der Insekten." xxxvi, 195-206. [1934.]

(a) Stammer discusses, by means of numerous examples cited from the relevant literature, the interrelationships of insects and nematodes and deals with the various types of associations. Insects may act merely as mechanical carriers, disseminating, by internal means, eggs of *Ascaris* or *Trichuris*, or externally encysted *Rhabditis coarctata*. They may serve as active or passive vectors or be subject to primary parasitism. Commensalism as another oecological relationship is also dealt with. The author has observed that bees of the genus *Bombus* from the Botanic Gardens at Breslau were infested with *Sphaerularia*, 48 out of 50 insects examined being parasitized. He also deals with the parasitism of *Trixagus dermestoides* L. by *Parasitylenchus trixagi* n. sp. which, however, is not described and with *P.* (?) *helmidis* n. sp., also undescribed, in *Helmis* and *Latelmis*. J.N.O.

423—Veterinary Medicine.

a. HANSON, K. B.—" Lungworm in foxes—its control and treatment." xxix (1), 12-16. [1934.]
b. WRIGHT, W. H. & UNDERWOOD, P. C.—" Fouadin in the treatment of infestations with the dog heart worm, *Dirofilaria immitis*." xxix (6), 234-246. [1934.]
c. ANON.—" Worm treatment in chickens." xxix (6), p. 258. [1934.]
d. NELSON, T. H.—" Capillaria infestation of chickens." xxix (7), p. 296. [1934.]
e. TEETER, W. R.—" Common nematodes and cestodes of the horse." xxix (9), 376-378. [1934.]

(a) Lung infestation is one of the most important diseases of the fox-breeding industry in the United States. The parasite *Capillaria aerophila* is described, the symptoms and lesions are briefly summarized.

Daily removal of faeces is recommended. Heavily infected foxes should be removed at once to quarantine pens. From infested pens the top three inches of soil should be replaced by clean sand or fine gravel or the ground

should be treated with boiling water or steam. Hospital pens should be floored with one-inch wire mesh, concrete floors or virgin soil. The use of the sponge-capped tracheal swab is a satisfactory means of removing the worms, but usually takes one to three months. R.T.L.

(b) Fouadin given intravenously or intramuscularly to dogs harbouring *Dirofilaria immitis* results in permanent disappearance of microfilariae from the peripheral blood, in the sterilization of the female worms and ultimately in the destruction of all the adult worms. The action of the drug on the worms is cumulative and may result in acute toxaemia or embolic pneumonia where a considerable number of parasites are present. The authors comment on the action of Fouadin in inducing a central necrosis of the liver cells and in acute toxic nephrosis. R.T.L.

(c) The author of this article considers that iodine vermicide treatment is the only one worth while from the poultry farmer's point of view as iodine kills the worms and their eggs. It passes through the gut quickly and is not toxic. P.A.C.

(d) It is not yet proved that *Capillaria* is responsible for increasing the susceptibility to other disease for most infested birds have shown some other major cause of disease. R.T.L.

(e) The various ways in which the different nematode parasites of the horse cause disease are described by Teeter. R.T.L.

424—Vida Nueva.

a. KOURÍ, P., BASNUEVO, J. G. & ARENAS, R.—" Una nueva aplicación de la emetina en parasitología." XXXIII (2), 77-80. [1934.]

(a) From its action in a short series of human cases of *Fasciola hepatica* the author concludes that emetine hydrochloride has as specfic an effect on liver fluke as in amoebiasis. R.T.L.

425—Videnskabelige Meddelelser fra den Naturhistoriske Forening i Kjøbenhavn.

a. DITLEVSEN, H.—" Some remarks on the spicular apparatus of *Enoplolaimus diplechna* (Southern)." XCVII, 207-210. [1934.]

(a) Ditlevsen describes in detail the spicular apparatus of *Enoplolaimus diplechna* (Southern), a free-living marine nematode, which possesses a single long spicule and a complicated arrangement of accessory pieces. He concludes that the " second accessory " piece of Southern really represents the second spicule of other species of the genus since it bears a characteristic cross marking and has a toothed tip as found on the spicules of other species in this genus. T.G.

426—West African Medical Journal.

a. CONNAL, A.—" Calabar swellings." VII (3), 113-117. [1934.]

b. RAMSAY, G. W. St. C.—" A study on schistosomiasis and certain other helminthic infections in Northern Nigeria." [To be continued]. VIII (2), 2-10. [1934.]

(a) Calabar swellings increase in frequency and multiplicity up to the second or third year and then diminish. Connal thinks that the swellings which are in the nature of anaphylactic reactions are in some way associated with the mating of the worms. R.T.L.

(b) Ramsay gives the results of using the intradermal test for schistosomiasis in Northern Nigeria. The antigen was prepared from *Bulinus tchadiensis* and *Physopsis globosa* naturally infected with *S. haematobium*. No less than two-thirds of 5,482 cases proved positive. The incidence of other helminth infections in the territory is noted. R.T.L.

427—Wiadomości Weterynaryjnych.

a. DOWGIAŁŁO, J.—" Pasorzyty przewodu pokarmowego a wpływ ich na ciałka kwasochłonne krwi u koni młodych." XIII (173), 618-629. [In Polish : French summary p. 630.] [1934.]

(a) Dowgiałło shows from examination of 120 horses aged 3 to 6 years and foals 1 to 90 days old that parasites are present in the intestinal tract of 95 per cent., the most frequently found parasite being of the strongyle group which form 87 per cent. : *Ascaris megalocephala* occurs in 49 per cent. of animals. In young horses the eosinophile count is twice as great in infected animals and 5 times as great in infected foals compared with parasite-free animals of the same age. This is not characteristic of the helminthic infection but is an aid to diagnosis. J.W.G.L.

428—Wiener Tierärztliche Monatsschrift.

a. GRABHERR, A.—" Praktische Erfahrungen über Ferkelkrankheiten und ihre Bekämpfung." XXI (2), 33-44. [1934.]

(a) As a result of investigating the death of 92 young pigs, varying in age from 4 days to 8 weeks, Grabherr found that *Strongyloides longus* was present in nearly half and was the probable cause of death in 37 per cent. It was associated with both dysenteric and mangy symptoms, and in one case a heavy infestation was found in a pig only 4 days old. The usual anthelmintics are useless ; " Tätivon " has been successfully used in pregnant sows but is dangerous in effective doses for sucklings, which the author has treated with good results with extracts of garlic. B.G.P.

429—Wilson Bulletin.

a. NAGEL, W. O.—" Relationships between diet and extent of parasitism in Bob-White Quail." XLVI, 147-149. [1934.]

(a) In a sketchy attempt to correlate diet and parasitism in the Bob-White Quail, Nagel tentatively concludes that the presence of sorghum cane in the diet has a restraining effect on parasitism. [There is no mention of what parasite is involved.] B.G.P.

430—Zeitschrift für Biologie.

a. HOFFMANN, R.—" Untersuchungen über die Wärmeentwicklung von Ascaris lumbricoides bei Fütterung mit Glukose, Fruktose und Galaktose." XCV, 390-400. [1934.]
b. WAECHTER, J.—" Über die Natur der beim Stoffwechsel der Spulwürmer ausgeschiedenen Fettsäuren." XCV, 497-501. [1934.]

(a) Hoffmann has shown that when Ascaris is placed in an oxygen-free saline solution containing a monosaccharide, some of the sugar is consumed and heat is liberated.

In the cases of glucose, fructose and galactose, the amounts of sugar consumed per gram of animals and per hour of time were, respectively, 0·00061, 0·00055 and 0·00080 gm., whilst the amounts of heat liberated were 0·50, 0·47 and 0·29 calories. These quantities of liberated heat correspond with 21·9, 22·7 and 9·7 per cent. of the heats of combustion of the glucose, fructose and galactose consumed. Hoffmann points out that the percentages for glucose and fructose are remarkably high in comparison with those obtained in fermentation processes. R.H.H.

(b) Waechter has demonstrated that the products of carbohydrate metabolism excreted by Ascaris consist chiefly of carbon dioxide and valeric acid, with a smaller amount of caproic acid. R.H.H.

431—Zeitschrift für Infektionskrankheiten, Parasitäre Krankheiten und Hygiene der Haustiere.

a. WOLFFHÜGEL, K.—" Paraplegia cruralis parasitaria felis durch *Gurltia paralysans* nov. gen. nov. sp. (Nematoda)." XLVI (1/2), 28-47. [1934.]

(a) Wolffhügel describes a new metastrongyle, *Gurltia paralysans* n. g., n. sp. from the veins of the domestic cat in parts of Chile and the Argentine. The worms are particularly common in the veins draining the lumbar region of the spinal cord where they cause paralysis of the hind limbs, the lesion being thrombosis of the infested veins with compression of the cord. The original host would appear to be the local wild cat, *Felis guigna* The new genus is closely related to *Haemostrongylus*. Eggs are laid in the veins and are common in the thrombi produced, but hatched larvae have not been found. The life-history is unknown, but local opinion has it that the cats are crippled through eating lizards, and the author thinks this possible. The eggs may be swallowed by insect larvae after the death of the host, the insects by lizards, and the lizards by cats. B.G.P.

432—Zeitschrift für Parasitenkunde.

a. CHITWOOD, B. G. & WEHR, E. E.—" The value of cephalic structures as characters in nematode classification, with special reference to the superfamily Spiruroidea." VII (3), 273-335. [1934.]
b. SZIDAT, L.—" *Dicrocoelium lanceolatum* Rud. 1803 in den Gallengängen eines Elches (*Alces Alces* L.)." VII (3), 392-394. [1934.]

(a) Chitwood and Wehr have studied the cephalic structures of nematodes, particularly the arrangement and distribution of the head papillae and

the structure of the stoma, with a view to establishing a satisfactory basis of classification. The data are discussed with special reference to the superfamily Spiruroidea.

The paper is divided into four main sections. I. Introduction and II. Historical are short. III. General section, is divided into 5 parts as follows : (i) cephalic structures of nematodes, (ii) the primitive cephalic pattern of nematodes, (iii) the nervous system and its importance in systematics, (iv) the stoma as a supplementary character in the classification of nematodes, (v) preparation of *en face* views of nematodes for the study of cephalic structures. IV. Deals with the relationships of members of the Spiruroidea as determined by their cephalic structures and some secondary characters. It is divided into several parts which treat of the evolutionary relationship of the following families :—Thelazidae, Desmidocercidae, Spiruridae, Acuariidae, Gnathostomatidae, Physalopteridae, Cucullanidae and Camallanidae. A final part deals with the evolutionary inter-relationships of these families. V. This is a section of systematics and covers the families already mentioned. T.G.

(b) Szidat records *Dicrocoelium lanceolatum* from the bile duct of the elk (*Alces alces* L.), a new host, in the Kurische Nahrung district of East Prussia. Though yet unrecorded from domestic animals in this region, the writer foresees a danger of its introduction by the migrating elk. The normal intermediate hosts, *Helicella* and *Zebrina* have not been found in East Prussia but a possible intermediate host occurs there in *Euomphalia strigella* Drap. This is the seventh species of helminth described from the elk including *Parafasciolopsis fasciolaemorpha*, a new genus described by Ejsmont in 1932 [see Helm. Abs., Vol. I, No. 118e]. S.G.S.

433—Zeitschrift für Wissenschaftliche Zoologie.

a. HSIÄ, F. T.—" Die Determination des primären Ektoderms von Ascaris megalocephala." CXLV (4), 523-540. [1934.]

(a) Hsiä investigated the differentiation of the primary ectoderm in 8-celled T-giants of *Ascaris megalocephala*. He used materiäl which showed unequal segmentation of the two primary ectoderm cells, and of no others. His findings are in agreement with those of zur Strassen (1906) and opposed to those of Bonfig (1925). B.G.P.

434—Zeitschrift für Zellforschung und Mikroskopische Anatomie.

a. CHITWOOD, B. G. & CHITWOOD, M. B.—" The histology of nemic esophagi. I. The esophagus of *Rhadbias eustreptos* (MacCallum, 1921)." XXII (1), 29-37. [1934.]
b. CHITWOOD, B. G. & CHITWOOD, M. B.—" The histology of nemic esophagi. II. The esophagus of *Heterakis gallinae*." XXII (1), 38-46. [1934.]

(a) Chitwood and Chitwood present observations on the structure and histology of the oesophagus of *Rhabdias eustreptos* with a view to a better understanding of the evolutionary relationships of various groups of nematodes. The gross morphology of the oesophagus is first described. The

distribution of several types of nuclei which are found in the wall of the oesophagus is dealt with in the following regions :—precorpus, postcorpus, isthmus, prevalvar region and postvalvar region. Charts and diagrams are given showing the location of these nuclei. Characteristic features of the latter are also described and figured. The 3 oesophageal glands and their nuclei and the openings of the gland ducts into the oesophageal lumen are also dealt with. T.G.

(b) This paper is the second of a series by Chitwood and Chitwood on the structure and histology of the oesophagi on nematodes. It deals with the oesophagus of *Heterakis gallinae*. The same plan is followed as in the first paper and, in particular, the nuclei of the following regions are described and figured :—precorpus, postcorpus, isthmus, prevalvar region, postvalvar region, oesophago-intestinal valve. A table and a series of diagrams are given showing the location and distribution of the nuclei. The structure of the latter, including those of the oesophageal glands, is described in detail, and the orifices of the glands are also indicated. T.G.

435—Zoologica. Stuttgart.

a. VOGEL, H.—" Der Entwicklungszyklus von *Opisthorchis felineus* (Riv.) nebst Bemerkungen über die Systematik und Epidemiologie." XXXIII (2/3), Heft 86, 103 pp. [1934.]

(a) In this detailed and well-illustrated monograph Vogel deals with the life-history and systematics of *Opisthorchis felineus*.

Bithynia leachi was experimentally infected to the degree of 73 per cent., while 10 other molluscs, including *B. tentaculata*, proved refractory. The miracidium hatches from the egg within the snail's intestine, in the neighbourhood of which the sporocysts form. It is the young rediae which migrate to the liver. Cercariae emerge during the daytime, 2 months after infection. Whilst *Tinca tinca* and *Idus melanotus* were experimentally infected, 6 other species of fish were refractory. The cercariae penetrate through the skin and gills and encyst in the musculature ; they become infective to the definitive host after a further 6 weeks. Here the young flukes reach the liver by way of the common duct (where the duct was ligated, no infection resulted). Vogel confirms the fact that *Fasciola hepatica* penetrates the intestinal wall and enters the liver from the outer surface. B.G.P.

436—Zoologische Jahrbücher. Abteilung für Anatomie und Ontogenie der Tiere.

a. PINTNER, T.—" Bruchstücke zur Kenntnis der Rüsselbandwürmer." LVIII (1), 1-20. [1934.]

(a) Pintner, from a critical examination of certain organs of some representatives of the Tetrarhynchoidea, discusses the morphology and probable functions of the retractile sensory organs or proboscides, the bothridia and their ciliated edges, the vesicular cells, which the author interprets as muscles, and the neurocords which connect the proboscis nerves with one another, with the bothridial nerves and with the lateral nerves so that every part of the

nervous system is linked together by neurocords. The paper does not easily lend itself to be abstracted as the author frequently refers the reader, in the textual matter, to consult one or other of the 19 figures which illustrate it in order to have a better understanding of his remarks. J.N.O.

437—Zoologischer Anzeiger.

a. HEINZE, K.—"Ein neuer Acanthocephale (*Rhadinorhynchus meyeri* n. sp.) aus dem Zoologischen Museum zu Greifswald." CVIII (9/10), 255-256. [1934.]

(a) Heinze gives a morphological description, based on a female, of *Rhadinorhynchus meyeri* n. sp. The Acanthocephalid, in the Greifswald Zoological Museum, was recovered from *Scomber pelamys* from the Indian Ocean and appears to be intermediate in position to *R. pristis* and *R. terebra*. J.N.O.

NON-PERIODICAL LITERATURE.

438—CALLOT, J.—"Réactions d'hypersensibilité cutanée et diagnostic des maladies parasitaires (non bactériennes)." Paris, 173 pp. [1934.]

Callot reviews the practical use of cutaneous reactions in the diagnosis of infestations with protozoa, helminths, arthropods and fungi. Under helminths he deals with distomes and schistosomes, cestode adults and cysts including hydatid, and some nematodes ; this section runs to 57 pages, and there are 28 pages of references. B.G.P.

439—CRUICKSHANK, A.—"*Onchocerca volvulus* (Leuckart). Its occurrence in the southern Anglo-Egyptian Sudan and its significance in the etiology of endemic blindness." Thesis, Aberdeen, 61 pp.

Human onchocerciasis is reported by Cruickshank for the first time from the Anglo-Egyptian Sudan. He gives an account of the pathological manifestations of *Onchocerca volvulus* in the Sudan and describes three typical eye cases in detail. Particulars of an area where 4·5 per cent. of the population suffer from endemic blindness are given. Operative removal of nodules, elephantoid tissues, hydroceles, and the possibility of eye surgery are described.
The finding of subcutaneous nodules containing undetermined *Onchocerca* worms and microfilariae in an antelope (*Cobus leucotis*) is mentioned, and a new method of extracting adult female worms by pawpaw juice is described. D.R.

440—EBER, A. & PALLASKE-EBER, R.—"Die durch Obduktion feststellbaren Geflügelkrankheiten." Hannover, ix+320 pp. [1934.]

Eber and Pallaske-Eber discuss a large number of disease conditions which they have met in post-mortem examination of many domestic birds over a period of years. In the section devoted to helminths there are short descriptions of each group of worms followed by a list of the parasites found. They have found 8 species of Trematodes, 18 Cestodes, 11 Nematodes and 2 Acanthocephala in the fowl, peacock, goose, turkey, duck, swan, pigeon, pheasant and guinea fowl. There are no new species. P.A.C.

441—FELDFORTH, W.—" Lebensfähigkeit der Rinderfinne bei Aufbewahrung von Stücken finnigen Fleisches bei Temperaturen von ± o bis -2°C. Prüfung von Lebenserscheinungen nach den gewöhnlichen Methoden, erforderlichenfalls auch Selbstversuche durch Verzehren solcher Finnen." Inaugural-Dissertation, Hannover, 24 pp. [1934.]

In a series of experiments Feldforth exposed portions of beef infested with *Cysticercus bovis* to a temperature of −2°C. for varying lengths of time. Viability was tested either by immersion of the cysts in a bile-saline solution at 41°C. or by swallowing the cysts sewn in small bags of silk (Iwanizky's method). He found that 2 days at −2°C. were lethal to cysts in pieces of meat up to half a pound in weight. B.G.P.

442—FILIPJEV, I. N.—[Nematodes harmful and beneficial to agriculture.] Moscow, 440 pp. [In Russian.] [1934.]

Filipjev's text-book deals with the nematodes of importance to agriculture, whether noxious or beneficial. An introduction covers general morphology, reproduction and development, after which follow sections on systematics, technique, parasites of plants, and parasites of insects. Each section has an extensive bibliography. There are 333 illlustrations which are particularly numerous in the section on systematics, where the free-living forms are also dealt with. Included in the systematic part are : *Bitylenchus* n. subgen. for 6 spp. of *Tylenchus* and *Heterodera humuli* nom. nov. B.G.P.

443—KLOTZ, J. D.—" Über den Wert des Tetrachlorkohlenstoffes als Anthelminthikum beim Hunde in Verbindung mit Kohle." Dissertation, Königsberg, 31 pp. [1934.]

Klotz found that when carbon tetrachloride was administered along with medicinal charcoal the toxic principle of the drug was removed by adsorption but the anthelmintic effect was maintained. Large doses (up to 5 cc. per Kg. of body weight) were given in this way to dogs and no toxic symptoms developed. The experiments showed also that magnesium sulphate was a better laxative than castor oil for the subsequent expulsion of ascarids. R.H.H.

444—KRONE, R.—Über den Einfluss der Kohle auf die Wirkung des Santonins als Anthelmintikum." Dissertation, Berlin, 27 pp. [1934.]

Krone found that the anthelmintic value of santonin was reduced when administered along with medicinal charcoal. On the other hand large doses administered in this way were not toxic. R.H.H.

445—MARKEWITSCH, A. P.—" Les maladies parasitaires des poissons de la province de Leningrad." Leningrad & Moscow, 100 pp. [In Russian : French summary pp. 93-94.] [1934.]

Markewitsch has monographed the parasites of fresh-water fish collected by an expedition in 1932 from 104 lakes in the Leningrad province. The monograph, which is based on 2,000 dissections of 25 spp. of fish, deals *seriatim* with protozoa, helminths, leeches, copepods and argulids, molluscs, and fungi, with chapters on fish as vectors of human helminthiasis and on control measures for fish diseases. It includes a description of *Diplostomulum hughesi* n. sp. and *Ancyrocephalus bychowskii* n. sp. B.G.P.

446—MOREL, R.—" Contribution à l'étude des habronémoses." Thesis, Paris, 67 pp. [1934.]

Morel, in a study of habronemiasis, gives morphological descriptions of the adults and larvae of *Habronema megastomum*, *H. muscae* and *H. microstomum*. The vector of the first two species is *Musca domestica* while that of the third is *Stomoxys calcitrans*.

After describing the lesions of the three types of habronemiasis, viz., gastric, cutaneous and pulmonary, the author shows that the gastric form may best be diagnosed by a biological method, or xeno-diagnosis, which consists in infecting recently hatched fly larvae. This method is only practicable during the warmer months of the year from 15th June to 15th September. This period, however, practically coincides with the time summer sores appear and with the period of egg-laying by the female worms in the horse's stomach. In the diagnosis of cutaneous habronemiasis parasites are extremely difficult to find but a marked eosinophilia is present at the periphery of summer sores. Prophylaxis consists mainly in controlling the two dipterous vectors and anti-fly measures are described. The anthelmintic treatment mentioned is indefinite. Treatment by dressing summer sores with Novarsenobenzol as an ointment, or in glycerin or powdered form is claimed by the author to produce a complete cure within a fortnight. J.N.O.

447—RICHTER, E.—" Über das Verhalten von Arekolin zu medizinischer Kohle unter Berücksichtigung der antitaenischen Wirkung." Inaugural-Dissertation, Berlin, 30 pp. [1934.]

Richter administered Arecolin mixed with medicinal charcoal to dogs infected with *Taenia*. He found that whilst the charcoal adsorbed the toxic principle of the drug, it also annulled the taenicidal effect. Thus only 3 out of 53 cases gave positive results, whereas with Arecolin alone 41 out of 43 were positive. In cases of *Dipylidium caninum* infection Arecolin proved ineffective, with or without the addition of charcoal. R.H.H.

448—SKRJABIN, K. I., SCHULZ, R. E. S., METELKIN, A. I. & POPOV, P. P.—[Veterinary parasitology and parasitic diseases of the domestic animals.] Moscow, 600 pp. [In Russian.] [1934.]

Skrjabin and his collaborators have produced a text-book of veterinary parasitology running to 600 pages and with 421 illustrations. The work opens with introductory chapters, on the content of parasitology and on different types of parasitism, by Skjrabin and Schulz, who also write the next section on veterinary helminthology. This section also has an introductory chapter, on historical and economic aspects of veterinary helminthology, followed by a zoological arrangement of helminths under the headings: " Trematodology, Cestodology, Nematodology and Acanthocephalology." A chapter on diagnosis, therapeutics and prophylaxis concludes this section. Metelkin deals with protozoology and Popov with " Arachno-entomology."

B.G.P.

449—STRONG, R. P., SANDGROUND, J. H., BEQUAERT, J. C. & OCHOA, M. M.—" Onchocerciasis with special reference to the Central American form of the disease." Harvard. Contributions from the Department of Tropical Medicine and the Institute for Tropical Biology and Medicine, No. VI, 234 pp. [1934.]

In the 1st part of this monograph Strong describes from various aspects human onchocerciasis in Guatemala, as observed in his expedition there in 1931 and 1932. In part II Sandground discusses the systematics of the genus *Onchocerca*. In the 3rd part Bequaert gives an account of the life history, habits and taxonomy of the local Simuliidae; whilst Ochoa contributes epidemiological data in the 4th part.

From his full discussion of the systematics of *Onchocerca*, Sandground is led to doubt the validity of many of the existing species. Whilst not making any formal changes in nomenclature he shows that on purely morphological grounds, owing to the great variability of taxonomic characters, only the following species are satisfactory: *O. volvulus* (including *O. caecutiens* and possibly also *O. gibsoni*, *O. indica* and *O. flexuosa*). *O. reticulata* (including *O. cervicalis*), *O. gutturosa* (*O. bovis*), and *O. armillata*. *O. lienalis* and *O. fasciata* are insufficiently described. *O. bambusicolae* and *O. fuelleborni* probably belong to distinct genera. B.G.P.

450—SZIDAT, L. & WIGAND, R.—" Leitfaden der einheimischen Wurmkrankheiten des Menschen." Leipzig, vi+212 pp. [1934.]

Szidat and Wigand's textbook is concerned with human helminthiasis endemic in Central Europe. After a general section of 28 pages dealing with parasitism, various diagnostic methods and anthelmintic treatment, there follow systematic accounts of the relevant trematodes (pp. 35-76), cestodes (pp. 77-140) and nematodes (pp. 141-212). There is no index. B.G.P.